

Arboretum BULLETIN

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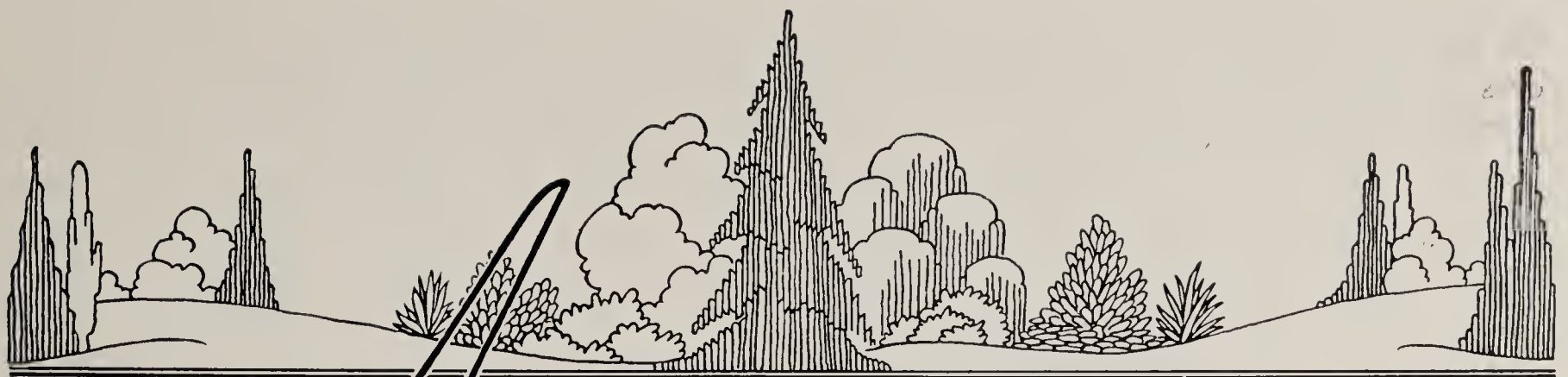
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The Arboretum Bulletin

VOLUME XVII

SPRING, 1954

NUMBER 1

The University Botanic Garden, Cambridge

J. S. L. GILMOUR *

THE FIRST Botanic Garden to be founded in Britain was (I regret, as a Cambridge man, to record!) at Oxford in 1621. It still flourishes, after 300 years, on the same site—historically one of the most interesting botanic gardens in Europe. Edinburgh and Chelsea followed in 1667 and 1673, and there was a gap of nearly a hundred years before the twin birth of the Gardens at Kew and Cambridge about 1760. Long before this, however, in 1588, and again in 1690 and 1724, there had been attempts to establish a Garden at Cambridge, all of which had failed through lack of support. The successful foundation in 1760 was due—as is so often the case with the beginnings of institutions—to the initiative and generosity of a private individual, Dr. Richard Walker, Vice-Master of Trinity College, who presented five acres of land to the University in the center of the city. Here a typical eighteenth century garden was laid out by the Professor of Botany, Thomas Martyn, with the help of the great Philip Miller of Chelsea, and Philip's son, John, was appointed the first Curator.

The Garden flourished on this site for over seventy years, and during this period was published the early editions of James Donn's *Hortus Cantabrigiensis*, a catalogue of plants in the Garden. In the 1830's, however, the

need for expansion was felt, and a site of forty acres to the south of the city was purchased by the University. Corporate bodies moved no faster a hundred years ago than they do today, and it was not until 1846 that the first tree—a lime still standing by the main gate—was planted. Professor Henslow (Darwin's teacher at Cambridge) had intended to lay out the whole forty acres as a Garden, and plans exist showing how he would have done it; but, in fact, only the western half of the area was used, the remaining twenty acres being let out, in the course of time, as allotments. As we shall see later, however, it has recently been possible, after a hundred years, to begin the carrying out of Henslow's original intention.

During the middle years of the nineteenth century the new site was gradually planned and planted, and by the 1860's, when a range of glass was built, it was ready to play its part, hand in hand with the Botany School, in the rapid expansion of botanical research and teaching that was about to take place. During the period (1879-1919) of its great Curator, R. Irwin Lynch, the main features of the Garden included an improved range of glasshouses, an area of systematic beds, groups of trees and shrubs arranged in families, a lake, a rock garden (one of the earliest in Britain), and a fine lawn. One or two of the allotments in the undeveloped section were used for botanical research, and some of

*Mr. Gilmour, now Director of the Cambridge Botanic Garden, formerly occupied the same position at the famous Royal Horticultural Society's Gardens at Wisley, England.

the pioneer genetical work by Bateson, Saunders and Hurst was carried out there.

Until two years ago the Garden, in its broad outline, was much as it had been during Lynch's time. What are its main functions in relation to the University, the City, and to the sciences of botany and horticulture? First and foremost, it serves the teaching of botany in Cambridge. Hundreds of specimens are sent every year from the Garden to the Botany School, and parties of students constantly visit the systematic beds and glasshouses during term-time. As any one in charge of a University Garden will know, the cutting of large quantities of teaching specimens from precious trees and shrubs is a recurring sorrow to the horticultural souls of his staff—but it is a sorrow that must be manfully borne! Side by side with teaching go the needs of research, and an important function of the Garden is to provide facilities for work on plant diseases, physiology, genetics, cytology, experimental taxonomy and other branches of botany.

A third important aspect of our work is the training of young gardeners. At present there are sixteen "student gardeners" who spend two years at Cambridge, working for a wage but, at the same time, receiving free lectures, demonstrations and other types of horticultural training. These student gardeners, as at Kew, Edinburgh and Wisley, come from all over Britain, and occasionally from other countries as well.

Lastly, the Botanic Garden is on the edge of a city of nearly 90,000 inhabitants, and although the civic authorities do not contribute to its upkeep, it is open on weekdays free to all. It serves, therefore, as a public park as well as a botanic garden, and mothers with their children bulk large among its visitors. Certain minimum regulations control their behavior and the University is glad to welcome as many as have time and inclination to come.

The rainfall at Cambridge (average just over 21 inches annually) is one of the lowest in Britain; this, combined with a very well-drained, gravelly but limey soil, renders the conditions very different from those of other

well-known British gardens such as Kew, Edinburgh and Wisley. There are no rhododendrons or camellias, except in specially prepared beds, very few *Ericaceae*, and conifers (especially *Picea* and *Abies*) do not, on the whole, flourish. But there are compensations. Trees and shrubs from eastern and southern Europe, western Asia and western America do as well at Cambridge as in any garden in Britain and, all in all, we would not, I think, exchange our conditions for something damper and more acid, even if we had the chance! Our little concrete-lined peat bed, stuffed with rhododendrons, gives us a glimpse of another world, but our real pride is the many-stemmed, hundred-year-old Judas Tree on the other side of the Garden, with a spread of nearly 60 feet!

Besides this *Cercis*, a number of other interesting trees and shrubs grow in the Garden. There are good specimens of *Pinus Gerardiana* from Afghanistan, *Acer orientale creticum* and *A. monspessulanum* from the Mediterranean, *Quercus x Warburgii*, *Crataegus tanacetifolia*, *Pterocarya fraxinifolia* (suckering along the edge of a stream) and *Umbellularia californica*. Our *Metasequoia glyptostroboides* by the edge of the lake, planted in 1949, is over 15 feet high, and a second specimen, growing in almost pure ashes in the plunging yard, is nearly as tall.

One of the great assets of the Garden is a series of south-facing "bays" between the glasshouses in which many tender plants find shelter that would not flourish in the fully open ground. Some of these were killed or cut back in the exceptionally severe winter of 1946-47, but there are still some good things left, and others are being planted. *Geranium anemonifolium* from Madeira and Teneriffe makes a fine clump, *Bauhinia yunnanensis* climbs over one of the doors, and *Bomarea x cantabrigiensis* (a hybrid made at the Garden) flowers profusely every year. Slightly more exposed, against the south end of a house, there is a tangle of *Opuntia cantabrigiensis* from Mexico that has flowered and fruited there for more than fifty years.

The Garden is the home of the National Species Collections of *Tulipa* and *Narcissus*.

These are sponsored by the Ministry of Agriculture and Fisheries and form part of a scheme covering several horticultural genera spread over four gardens. The aim of the scheme is to maintain full collections of wild species of the genera concerned so that authentic material may be available to plant breeders. Our tulips, consisting of about sixty species, make a fine show from March to May.

In the glasshouses there is a comprehensive collection of plants from all over the world. Recently we have got together a good series of Mediterranean ground orchids—a group seldom grown in British gardens. Our pans of *Ophrys* and *Serapias* species, displayed in the Alpine House in March, have created considerable interest, and some of the hardier species are also growing outside.

The history of the Garden, as we have seen, goes back nearly two hundred years. What of the future? Recently, a magnificent bequest by the late Mr. Reginald Cory, amounting to nearly half a million pounds, has completely

changed our prospects; a scheme for expansion and development is now under way and is due for completion by 1960, the bicentenary of the founding of the Garden.

In the forefront of our plans comes the incorporation into the Garden of the twenty acres that have for so long been allotments—thus fulfilling the University's intention when the land was purchased in 1831. Three and a half acres of this new area will be devoted to growing plants for research purposes, and two glasshouses and a laboratory will be built. A formal "winter garden" for plants at their best from December to February has already been constructed, with a center bed of *Prunus subhirtella autumnalis*, *Viburnum fragrans*, and a "carpet" of the prostrate form of the scarlet-berried *Cotoneaster x hybrida*. A new main

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(Below)

Pyrenees Pine (70 to 80 years old)
and Weeping Willows beside the
lake, Cambridge Botanic Garden

—PHOTO COURTESY CAMBRIDGE DAILY NEWS, LTD.
(FIG. 1)



Tree Peonies

JOHN C. WISTER *

THE tree peony is one of the most magnificent and fascinating of plants. It is, however, not a tree but rather a shrub. It grows in four or five years to about three feet high and across, but with age it sometimes attains five to six feet in height and six or more across.

The flowers in a general way resemble the ordinary garden peony (*Paeonia albiflora*) but are larger, averaging from 8 to 10 inches across and occasionally more than 12 inches. The most popular varieties are single or semi-double, but there are also full double varieties. Most of the doubles, however, are so heavy that the stems cannot properly support them, so that instead of being held upright they hang down and often are hidden under the foliage. For this reason most gardeners prefer the lighter flowers of the single varieties. The texture of many of the finest varieties is silky or satiny, giving the colors a remarkable sheen in different lights.

One of the outstanding features of the tree peony as compared to the herbaceous peonies is the great color range from white to the deepest crimson, from lilac shades to purple and from yellow to maroon, with all possible blends of all these colors. The list of typical varieties given at the end of this article shows how remarkable these colors are.

The Chinese herbaceous peonies bloom the first week in June in my section of southeastern Pennsylvania. The yellow tree peonies come the last week in May, and all the other tree peonies except the yellow come the first or second week in May. Thus we get a long season of bloom.

With all these fine qualities, why are the tree peonies so little known? They are not new to gardeners. The Chinese have grown them for more than fifteen centuries, the Japanese for at least ten. They have been grown

in the Boston, New York, Philadelphia and Baltimore areas for a century and a half and yet there are few really large collections and few nurseries propagating plants.

The answer is perhaps to be found in an oft-quoted article in the *American Gardeners Magazine and Register* just ninety years ago in which Hovey wrote: "It is too slow a plant for us Americans. We must have something like a verbenas which can be had in full bloom and sells cheap."

The tree peony certainly does not sell cheap. It can't. Propagation, no matter how skillful, is slow because not much propagating wood is formed. A rose bush 3 feet by 3 feet would provide hundreds of buds for propagation, but a tree peony that size would have not more than a dozen cions large enough to graft. In rose budding or grafting the percentage of success is in the high nineties. Our most experienced tree peony propagators seldom get over 80 per cent, and in many years, particularly with the yellow varieties, it may only be 30 or 40 per cent.

In addition to this it takes two or three years (not one as in the case of the rose) to produce a saleable plant. All these factors limit the number of plants that can be offered to the public each year and of course tend to keep the price relatively high.

Tree peonies like herbaceous peonies require perfect drainage and prefer a lime soil. Unlike herbaceous peonies, which must have full sun, tree peonies benefit by partial shade. They are woodland plants in their wild home in the Chinese mountains.

No details are known about their fertilizer requirements. The plants grow well in any well-drained garden soil. The Japanese are reported to feed them with fish but the Japanese soils and conditions are so different from ours that this is hardly a guide to us to use

*Mr. Wister, one of the outstanding horticulturists of the country, is Director of the Arthur Hoyt Scott Horticultural Foundation, Swarthmore, Pennsylvania.

Japanese type of "tree" peony in Arboretum.
Flower bright rose, 9 to 10 inches diameter
—PHOTO BY E. F. MARTEN
(FIG. 2)

high nitrogen fertilizers. The danger of over-fertilization, especially with nitrogen, is that it induces a quick, soft growth susceptible to attack by disease. In the case of the tree peony this ever-present danger is from two types of wilt, one caused by *Botrytis* and the other possibly only by cold, damp weather or sudden changes of temperature. Late spring frosts are also a danger as growth starts very early, but the soft young stems, leaves and buds stand a surprising amount of cold, and this past season in Pennsylvania were not injured by a late April frost that killed all the young foliage of *Azalea Schlippenbachii*. The plants are winter hardy to at least 20 degrees below zero, and have apparently suffered top damage only at 25 to 30 degrees below zero.

The best season for planting is from late September to early November. Propagation by grafting is hardly practical for most amateurs. Nurserymen graft in August or later

on roots of *Paeonia albiflora*. The type of wood of the cion and the nature of the herbaceous rhizome make the work much slower than in grafting operations on most other plants. The exact method and the after-treatment vary in different nurseries.

Propagation by seeds also is slow. Seeds often take two years to germinate and from 6 to 10 years to bloom. Even from seed chosen from the choicest kinds the percentage of good colors may be small.

As already mentioned, the flowers are so gorgeous that in spite of these difficulties the plants have been grown in gardens for centuries. Even the old Chinese books of the sixth century speak of them as flowers long cultivated and in the seventh and eighth centuries there were accounts of collections of many varieties. Buddhist monks are believed to have taken the plants to Japan in the ninth century. In the 18th century Sir Joseph Banks



at Kew became interested in Chinese drawings depicting the large flowers, and arranged with "a medical gentleman" attached to the East India Company to be on the lookout for such plants if they really existed. This man found plants of a double variety of the Moutan Peony (*Paeonia suffruticosa*) in Canton, and sent them to England where they bloomed about 1790. It was supposed that they were native in the Canton region, and only much later was it learned that they were grown commercially in the mountains nearly a thousand miles away and transplanted to Canton by river boat. But even these growers did not know of any wild plants. It remained for European explorers, particularly Reginald Farrer and William Purdom, to find them only about 40 years ago in the mountains of Kansu and Shensi.

The Chinese gardeners had perfected the types they liked best, the heavy double formal

flower. Some 40 of the best of these were brought to England from Chinese gardens in the 1840's. The more artistic and more graceful singles and semi-doubles originated in Japanese gardens and the finer varieties reached western gardens only in the late '90's or early 1900's.

Plants of two other species, the yellow *Paeonia lutea* and the maroon *Paeonia Delavayi* were apparently not known to Chinese gardeners. They were discovered in Southwest China by the French Jesuit botanist, Père Delavay, and sent to Paris about 1890. In contrast to the Moutan Peony their flowers are very small, usually only two or three inches wide.

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(Below)

Paeonia lutea—yellow shrubby peony from southwestern China

—PHOTO BY E. F. MARTEN
(FIG. 3)



A Peek into Pandora's Jewel Box—1954

HELEN BUZARD *

CAMELLIAS, new, newer and newest with names of people and places and names like poetry—"Melody Lane" and "Frosty Morn," "Bride's Bouquet" and "Seventh Heaven," to gladden the heart of the camellia enthusiast. There is no thrill like a pre-view of new varieties, introduced and to be introduced, with the resultant conversation, discussing, comparing, evaluating.

There are several hundred camellias which might be considered "new" in the Northwest simply because they have not been seen or grown there. Many of these would, to the locale where they originated, be old varieties. Distribution bears an important relation to the age or newness of any plant and this is particularly true with camellias which seem rather laggard in their dispersal. No two seedling camellias are alike and the increasing of plants is a slow process so that unless a variety is really put into mass production it might be "out" for several years before it would reach all parts of the camellia world.

Another retarding factor is that camellias do not perform consistently; a good variety in the Northwest might not be so satisfactory in a drier, hotter section, and a fine performer in the south might lag or sulk with us. Only the true Camelliaphile is apt to gamble his money on an unproven variety.

On the other hand, the demand for "new" has been so great that most of the growers and many amateurs have felt compelled to put out new varieties. This has resulted in many being named and put on the market which have little or no merit. Not all new camellias are seedlings, some are sports of old varieties, others are old un-named varieties which have been enjoyed by their owners but have not been "discovered" by a grower or

fancier. The expression in the "trade" for these is that they are "sleepers."

Very few of the seedlings are from hand-pollinated flowers. Some are from seed where the seed-bearing parent is known, some few others are from seed where the seed bearer is known and the pollen parent suspected. Of all the seeds planted only a very small fraction of 1 per cent will be worthwhile. Before a new variety is propagated it should have proven qualities: color, size, perfection of form, substance, floescence, general quality and distinction and should be comparable to or excel any of the established varieties.

Among the varieties which have been grown in the Northwest and are of proven merit none is more lovely than "Auburn White," a "sleeper." It is a very large semi-double to single, white with just a hint of pink, heavy textured, petals sometimes slightly crinkled and sometimes folded about the golden yellow stamens. It blooms late in the season and is unaffected by weather.

It has long been the desire of every hybridizer to produce a fragrant camellia. "Sweet Bon Air" is the answer to at least one of those dreams. It is a semi- to informal double white, with a very definite, fine sweet fragrance.

"Finlandia" is considered one of our best white camellias; "Finlandia Variegated" is equally fine. A few years ago a grower had a red sport appear which he developed and called "Red Finlandia." Another sport, a soft rich pink of exquisite tone, is called "Monte Carlo"; this sport has a marbled variety which is equally desirable. Soon there will be available still another sport of this fine camellia, a blush pink which is delicately pink in the bud, opens a very pale pink which has definite color when placed beside the white. One of the satisfactory features of "sports" is that they can be counted upon to perform in the same manner as the original.

So much emphasis is placed on size that it is gratifying to find a delightful small variety. "Florence Daniell" is a perfectly formed

*Mrs. James Buzard speaks with indisputable authority on Camellias as she has long been engaged in the propagation and culture of these handsome evergreen shrubs. "Helen Buzard" is also a familiar name to those who remember the excellent magazine "Little Gardens" published in the late 30's and early 40's by the Lake Washington Garden Club.

peony-type flower of a soft pink color and small in size.

A camellia of contrasts is "Tinsie," a single with one row of bright red petals and white stamens and petaloids in a close tuft in the center.

"Joshua E. Youtz" is sometimes called "White Daikagura" because it was at first thought that this very fine white was a sport of "Daikagura." Were it a sport it could be considered as satisfactory as the original; however, it is supposed to be a seedling with "Daikagura" blood and for this reason can be expected to perform as well as the parent. "High Hat," though perhaps not new enough to be included in these lists, is a pale pink sport of "Daikagura" and is proving equally satisfactory.

Introduced at about the same time as "High Hat" were two sports of "Elegans" (Chandler), "C. M. Wilson" and "Grace Burkhard." This was an instance of a variety sporting at about the same time in two widely separated parts of the country. "C. M. Wilson," however, was marketed first and so the pale pink sport of "Elegans" carries that name. For years camellia enthusiasts have hoped for a pure white form of "Elegans." This Spring "Shiro Chan" will be available. It is a pure white and has all the perfection of form, size and substance of the parent.

"Flowerwood" is a sport of "Mathotiana" and is identical in every respect but with the added interest of having the edges of the petals very finely serrated.

Occasionally a new variety will be very similar to an old one but may have some feature which enhances its value. "Drama Girl" at first glance is just another "Lady Clare," perhaps it is a little larger—this could not be determined unless they were grown under the same conditions; it may have a few more petals, but it is said to have the added advantage that the flower holds on the plant for a week or more in the south where "Lady Clare" will drop in twenty-four hours.

"Marjorie Magnificent" is in the same category as "Drama Girl." It is the same fine pink and the same form as "Magnoliaeflora" with

perhaps a few more petals but it is said to be very weather resistant, opening perfect flowers in cold or unfavorable weather. Should this be true in our area it would readily replace "Magnoliaeflora" which is very lovely but so touchy about its surroundings.

"Melody Lane" is a very large semi-double to peony type, bluish pink variegated deeper pink. One very fine and interesting characteristic is its manner of blooming. It makes long growth and sets a flower bud in the axil of nearly every leaf.

"Masquerade" is a very large semi-double white which may have blooms with faint to heavy pink stripes or an almost all-pink flower. The sunburst effect of the golden yellow stamens gives it distinction.

"Spring Sonnet" is a sport of "Hikaru-Genji" ("Herme") in the color of "Pink Perfection." Another sport of the same variety is "Md. Calusante Pink," a semi-double with ruffled petals in a slightly deeper shade than "Spring Sonnet."

"Jessie Katz" is a large semi-double watermelon-pink with the sheen and silky texture of *C. reticulata*. "Edwin Folk" promises to be one of the very finest reds for color, clear bright red with a glow. The flower is semi-double of good size. "Dessa Thompson" is a pure white counterpart of "Debutante."

Several fine seedlings from "Lotus" are now or soon will be available. "Masterpiece" is a large formal white of real perfection. The foliage is exceptionally large, a vigorous grower but it may prove to be a shy bloomer. "Bride's Bouquet" is a semi-double white, large and very like "Lotus." "Frosty Morn" is another very beautiful white seedling from this same seed parent.

"Elegans," too, has furnished the seed parent for some very fine varieties. "Sunset Glory" is a coral-colored variety in size and form like "Elegans." "Pink Cloud" is a very lovely pale pink, large with wonderful depth to the flower.

"Frank Gibson" has an inherent something that makes one want it and hope that wherever grown it will retain the same large size,

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Arboretum Spotlight

Magnolia denudata

"The best of all . . ."



FEW MAGNOLIAS have so many points of virtue in their favor as does the famous Yulan magnolia, *Magnolia denudata*. It is undisputedly the finest of the deciduous white species. Its handsome, immaculate flowers are deliciously sweet-scented. Cultivated for over thirteen centuries by the flower-loving Chinese, the cup-like bloom has long been used by Chinese artists as the symbol of candor and purity.

Few, also, have so many botanical names. These are interesting to note: Desfontaines called it *M. Yulan* in 1809; Salisbury *M. conspicua*, 1806; Correa *M. precia*, 1803, and Desrousseaux *M. denudata* in 1791. Recently it has been pointed out that Buc'hoz included an illustration of the tree in a book published in 1779 under the name *M. heptapeta*!

If we could choose appropriateness as the criterion for naming instead of priority, the most fitting, no doubt, would be *M. conspicua* for it is indeed the most conspicuous tree in our gardens, as in the Arboretum where it graces the hillside slopes of Rhododendron Glen as well as the Magnolia collection, from mid-March to mid-April. The chalice-like

(Above)

Magnolia denudata in Rhododendron Glen
16 feet in height

—PHOTO BY E. F. MARTEN
(FIG. 4)

flowers at the tips of the naked branches are the more noticeable because they come before the leaves, while the large, gray, shaggy scales wrapped about the buds, which hold such promise of beauty, are conspicuous in themselves all through the winter.

Writing on magnolias in the Royal Horticultural Society's Journal (June, 1943) the late Lord Aberconway, one of England's most outstanding horticulturists, names "The Big Five, unrivaled in their beauty: *Magnolia Campbellii*, *M. Sargentiana*, *M. mollicomata*, *M. Dawsoniana* and *M. Sprengeri* var. *diva*." However, in closing the article he says, "I almost suspect that it is only familiarity which prevents me from classing *M. conspicua* (. . . I definitely refuse to call it *M. denudata*, still less *heptapeta*) . . . with the other five and calling them 'The Big Six' . . . indeed, in one important way it is *the best of all* for it flowers abundantly the year one plants it and every year thereafter . . ." GENE WEBB



Western Hemlock

Tsuga heterophylla (Rafn.) Sarg.

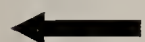
C. FRANK BROCKMAN *

IN A SENSE, the western hemlock is the “Cinderella tree” of Pacific Northwest forests. For years, suffering by comparison with the Douglas fir, western hemlock was usually scorned by early lumbermen as a “weed tree”—although its strong, fine-textured wood was used for flooring, certain types of boxes, framing for houses, and material for concrete forms. Suddenly, in the last decade or two, the western hemlock emerged to take its place among the important commercial timber species of the world as it rode the crest of scientific developments which recognized the fine, inherent qualities of its wood. Today it is considered of great value as a source of cellulose for paper pulp, rayon, cellophane and plastics which are fashioned into a great variety of forms.

Although interest in its utilitarian values was slow to develop, gardeners have recognized the beauty of this tree for a long time. The varying length of its needles—each attached to a small, rounded, persistent “cushion” on the twigs by a short petiole—gives the tree a handsome, lacy appearance. This is further emphasized by the pendant, “buggy-whip” appearance of its central leader. During certain portions of the year the cones, nodding from the tips of the branches, are of equal interest. These are usually produced in considerable quantity, are from $\frac{3}{4}$ to 1 inch long and are green during the early stages of development. At maturity, when the scales open to liberate the tiny, winged seeds, the cones acquire a dark brown, woody appearance.

Anyone familiar with western hemlock under

*Mr. Brockman's “descriptive pen” brings us another in our series of native Northwest trees.



Young western Hemlock trees in Arboretum
—PHOTO BY E. F. MARTEN
(FIG. 5)

natural forest conditions will understand the reason for its abundance throughout the Pacific Northwest. The tree is very tolerant and, thus, will grow in the dense shade characteristic of the deep forests of this region. One will often notice a veritable hedge of small hemlock seedlings growing upon down logs on the forest floor. Not uncommonly, seeds germinate and take root at the apex of some lofty snag. Because it is so tolerant, the western hemlock eventually replaces the less tolerant Douglas fir in the virgin forests of this region—unless some natural catastrophe or proper silvicultural practice in forest management opens up the stand to favor the development of the Douglas fir.

Although the western hemlock is essentially a tree indigenous to the lower elevations in the Pacific Northwest, it has a relative—the mountain hemlock—which prefers the sub-alpine meadows and more rigorous regions at timberline. These are two of the four species of native American hemlocks, the other two being found in the eastern part of our country. They are four of about a dozen species in the world, the others being native to the Orient—Japan, China, Formosa and the Himalayan region. Several of these foreign species occasionally find their way into American gardens.

The western hemlock is found along the Pacific Coast at low elevations from southeastern Alaska south to central California, and eastward from western Washington to western Montana.

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“CAMELLIA CARNIVAL”

The ninth annual Camellia Show, sponsored by the Amateur Gardeners, will be held in the *Post-Intelligencer* building Auditorium, Sixth and Wall Streets, Saturday and Sunday, April 10 and 11. Theme this year, “Camellia Carnival.”

Opinions on Some Newer Hybrid Rhododendrons

Because of the steadily increasing interest in modern rhododendron hybrids in the Pacific Northwest, where so many varieties can be successfully grown, the Editorial Committee decided, for our Spring issue, to request several well-known growers, both amateur and professional, in the Seattle area, and one in Oregon, to express their views on a selection of those which they consider suitable and to be recommended for general planting in this region.

Herewith is the interesting material from this enquiry:

The Editor has asked me to give my experiences with some of the newer rhododendron hybrids, so I will begin with a few of the dwarfer *R. Augustini* crosses.

One of the best that is generally available is BLUE DIAMOND, F. C. C. var. The color is clear, and the flowers are large for the size of the plant.

RUSSAUTINII is very good, with more of a truss than the others.

AUGFAST is a good bloomer, with paler flowers. "Blue Tit" in a good form is fine, although there are many poor seedling forms of it being sold.

For brighter color and later bloom, "Arthur Osborn" is very good, although there are a number of similar crosses coming on, of which many are better than this. It is best to see the newer ones in bloom before a selection is made, as there is generally a wide variation in seedlings from a cross.

In plants still larger, many of the forms of "Fabia" and "May Day" are very beautiful, with the added advantages of medium height, hardiness, and ability to take full sun. Of the former I think var. ROMAN POTTERY is the best, but there are many seedling forms that are good.

Many of the newer hybrids now becoming available have a disadvantage in not beginning to bloom until about six to ten years of age, but rhododendron enthusiasts now realize that they are worth waiting for.

Among some of these, now available in nurseries, are LADY CHAMBERLAIN and LADY ROSEBERY, in several named forms. These are twiggy, upright bushes with bluish foliage, and long, waxy trumpets in shades of salmon, orange, and pink.

LADY BESSBOROUGH, in varieties F. C. C., "Roberte" and "Montreal," are all very beautiful, with fine foliage, graceful habit of growth, and waxy, pale yellow flowers.

HALCYONE (*Souliei* x "Lady Bessborough") is one of the best I have seen so far. The flowers are flatter, opening cream color with a pronounced blotch. The plant is also more compact.

All forms of NAOMI are good, but I think the best one so far over here is "Exbury var." The flower is clear pink, with a creamy center. Hybrids of "Naomi," such as CARITA, are also outstanding, and are now becoming available, as is IDEALIST (*Wardii* x "Naomi").

There are a great many more new rhododendron hybrids that could be mentioned, but information regarding them can be read in various bulletins and books published here and in England.

Hybridizing among these newer plants is being done in this country, and many outstanding rhododendrons will soon be exhibited in the shows, and will also be obtainable for private planting.

LESTER BRANDT
Tacoma

In submitting this report I have tried to see these rhododendrons through the eyes of the gardener who is primarily interested in garden plants which are reasonably easy to grow and yet sufficiently new to provide a note of interest in the garden. Last spring I displayed several of the newer Exbury rhododendron hybrids in the nursery, not so much for sale since stock is still scarce on many of them, but to get the average gardener's reaction to new forms and color. The response was most gratifying on the following and I have no hesitation in recommending them as ornaments for average garden conditions.

CARITA var. GOLDEN DREAM. The ladies were especially fond of "Carita" var. "Golden Dream" ("Naomi" x *campylocarpum*). The shaded apricot-pink buds of this delightful hybrid open into a rounded truss of 12 to 13 ruffled ivory flowers. The foliage is neat, reminiscent of *R. campylocarpum* rather than "Naomi" and the ultimate height should not exceed 7 feet.

DAMOZEL. The male gardener's choice last year was "Damozel," which is a hybrid between a bright rose, hardy seedling from Anthony Waterer, crossed with the Exbury form of *R. Griersonianum*. It is apparently hardy down to zero and is not unlike "Vulcan" in general growth habit. The color is a bright watermelon red and the trusses comprise about 17 flowers carried in dome-shaped umbels. "Damozel" began to bloom in early April and was shown at a local flower show in early May, then returned to the nursery where it was still in good color during the last week of May.

DAY DREAM, biscuit form. "Day Dream" ("Lady Bessborough" x *Griersonianum*) has been in the trade for a number of years, but this is the so-called red form which as a general rule has very poor foliage. The biscuit form of "Day Dream" is a beautiful hybrid and a vigorous, easily grown garden plant. It bloomed in early May last year and the unusual color caused a lot of comment. The opening buds are deep pink, and as the flowers open the interior becomes biscuit color, making a striking combination that is most attractive.

NAOMI. Of all the Exbury hybrids my favorite is "Naomi" ("Aurora" x *Fortunei*). There are many clonal forms of "Naomi," all of them desirable, but I believe that the Exbury form is best suited for average garden conditions. The flowers are 5 inches wide, with broad frilled petals slightly recurved and spreading out from the short tube, allowing one to enjoy the delicate shadings within. The petals are tinged a soft rosy pink but gradually become suffused a pale biscuit yellow towards the center. Each truss contains from

9 to 10 flowers and they are at their height about the second week in May.

DEVONSHIRE CREAM. I am sure that most rhododendron enthusiasts know and admire "Unique," an excellent compact cream-flowered hybrid suited for the smaller garden. "Devonshire Cream" (*campylocarpum* x a hardy hybrid) is similar in many ways to "Unique" and might be called a smaller edition of that variety. It makes a neat, rounded plant eventually becoming 4 feet at maturity with compact trusses of rich cream flowers marked red in the throat. Those who have seen "Devonshire Cream" prefer it to "Unique" because it retains its deep cream color right up to the last, and because of its smaller stature is especially desirable as a foundation or front of the border shrub.

CILPINENSE. Speaking of plants for foundation planting, there are several rhododendrons which may be used on the east or north side of the house, or on the west and south provided there is overhead shade during the heat of the day. *Cilpinense* (*ciliatum* x *moupinense*) is a charming, low-growing hybrid with clean, good-looking foliage and quantities of pinkish, funnel-shaped flowers in early April. The plant's ultimate height is about 3 feet and it is of easy growth.

There are three hybrids out of *R. Augustini* which make excellent companion plants for *R. cilpinense*.

BLUE TIT (*impeditum* x *Augustini*) is the most rugged of them and makes a dense low growth with small grey-green leaves and an abundance of lavender-blue flowers in early April. It may be used as an informal hedge or planted en masse along walks or at the turn of a path.

BLUE DIAMOND (*intrifast* x *Augustini*) is a better color but more upright in habit. Apart from a slight difference in leaf shape the two are very similar.

BLUEBIRD (*intricatum* x *Augustini*) is a more recent introduction than the preceding two hybrids and from its performance to date it may well prove superior to either. The flowers are described as Veronica Violet (H. C. C. 639/1); each truss contains from 8 to 10

flowers each of which is 2 inches in diameter.

CARMEN. One of the most fascinating species to the avid collector is *repens*. It is also one of the most frustrating to grow. In "Carmen" (*didymum* x *repens*) we have the fascination without the frustration for it blooms profusely without much coaxing and seems to be happy under average rhododendron care. This is another Exbury hybrid created by the late Lionel de Rothschild in 1935, but still scarce in this country. Cuttings strike readily and flower buds are already evident on plants 2½ years old. It is a true dwarf and should prove a natural for the alpine garden or as an edging along a path. I have not seen a plant which exceeds 12 inches in height although they do become three feet or more in width. The rounded dark green leaves are about 1¼ inches long and the waxy crimson bell-shaped flowers appear in early April.

ARTHUR OSBORN. A near relative of "Carmen," "Arthur Osborn" (*didymum* x *Griersonianum*) is much taller, possibly becoming three feet high, with dull green pointed leaves and lax trusses of dark scarlet tubular flowers in June.

All the foregoing varieties have been grown successfully in the Salem, Oregon, area and I would judge them to be at home wherever rhododendrons are grown on the West Coast.

P. H. BRYDON
Salem, Oregon

My garden is situated in the south of Seattle on Lake Washington. It has a southeastern exposure, side hill drainage and is well sheltered by trees and large hedges. Protection is afforded on the west by a small hillside so, with its proximity to the water, temperatures probably will be from 5 to 10 degrees higher in cold spells than more exposed gardens in this vicinity. This will naturally affect to some extent all the features mentioned in the following descriptions.

BO-PEEP (*lutescens* x *moupinense*) was first introduced by Rothschild in 1934.

Both ancestors bloom early, and likewise in the Northwest garden February to early

March is the usual blooming period for "Bo-Peep." My 12-14 years old shrubs are five feet tall. Some are thick and bushy, others tend to be sparse with long lateral arms not too thickly leaved. The leaf is small and shiny with a rounded tip. The bloom is profuse, creamy light yellow, and an extremely welcome sight at this time of year. It seems to produce a deeper green and more abundant foliage in shade. When exposed to sun the bloom is much more abundant. It survived our severe 1950 winter without any ill effects. This is one of my favorites.

LADY ROSEBERY (*cinnabarinum* var. *Roylei* x "Royal Flush," pink var.). Introduced by Rothschild in 1930.

A hardy, small-leaved rhododendron growing in a rather shrubby manner. The flower, which blooms in April-May, is elongated and tubular, bright rosy pink in color and not easily affected by the weather. The leaf is a relatively long, narrow one that is deep green in color and somewhat shiny. My 15 years old shrub is five feet tall and has done very well in both full sun and heavy shade. This rhododendron is quite similar to "Lady Chamberlain" except for the color of the bloom.

LADY BESSBOROUGH (*discolor* x *campylocarpum* var. *elatum*). First introduced by Rothschild in 1933.

A 15-year-old shrub, which is seven feet tall, is probably the last one in my collection that I would part with. The amateur hybrid collection is surely omitting a beautiful specimen if "Lady Bessborough" has not been included. It has seemed very hardy and puts on a reasonable growth each year. The habit is not compact but certainly is not leggy. The leaf is medium in length and breadth with a rounded distal end. The flower buds are prominent and when they break in May you are treated to the most beautiful flower of ivory white, with the very faintest hue of yellow and a peach color in the throat, that has been produced in a rhododendron. It does not flower profusely, but would be classed as a moderate producer of blooms in partial shade. The flowers are easily damaged by rain and would undoubtedly be by full sun.

LADY CHAMBERLAIN (*cinnabarinum* var. *Roylei* x "Royal Flush"). Introduced by Rothschild in 1930.

In my garden this is a hardy, rather tight, shrubby-growing, small-leaved rhododendron which in 15 years has attained a height of five and six feet respectively in two slightly different forms, the height dependent undoubtedly on their situation in the garden. One of these shrubs has been of particular interest; after the new leaves develop, and for some time thereafter, they appear silvery green with a bluish cast. This in itself creates a very unusual and different rhododendron worthwhile from the foliage standpoint alone. Secondly, it has flowered twice a year since 1947 when it was moved. The slightly heavier spring bloom occurs in May and the fall bloom in October. The flowers are tubular, in various shades of orange, and the bloom is very heavy and not easily affected by rain. For a color of this type in a small-leaved rhododendron "Lady Chamberlain" in this vicinity cannot be beaten.

ELECTRA (*chasmanthum* x *Augustini*). Introduced by Rothschild in 1937.

As I have observed the growth and flowering habit, appearance and hardiness of "Electra" it closely resembles *Augustini*, although it does not grow as rapidly nor as tall, which in individual instances may be desirable. The bloom is a little more truss-like and a deeper blue than most forms of *Augustini*. It is well worthwhile if space is available but not very different from *Augustini*.

BLUE TIT (*impeditum* x *Augustini*). Introduced by J. C. Williams in 1933.

"Blue Tit" is a hardy rhododendron often referred to as a dwarf variety but after a few years this dwarf can become quite sizeable. The growth habit is tightly compact and for that reason is most attractive. The bloom which comes in later April-May is blue, very small and dainty, but in my experience it does not bloom profusely. The leaf is small, shiny and deep evergreen and not much larger than that of privet.

CILPINENSE (*ciliatum* x *moupinense*). Introduced by Aberconway in 1927.

This rhododendron reaches a size of about

2½x2½ feet in 10 years. The growth is not nearly as bushy as "Blue Tit," giving an opportunity for each flower to be more readily displayed. The individual leaf is 3-4 times the size of those of "Blue Tit." The flowers are whitish pink and give a very gaudy display for early April or late March. It is also hardy, surviving our severe winter in 1950 without incident.

DIANE. The parentage is unknown. Introduction was by M. Koster and Son in Boskoop, Holland, in 1948.

This is a large-leaved, hardy rhododendron which does better in at least partial shade. It has a moderate rate of growth and a tendency to develop erectly without much lateral spread. The foliage shows in some plants an inclination to become pale under the same conditions where other rhododendrons show a deep green leaf. Flower buds are large, abundant and prominent before breaking forth in later April or May into a gorgeous yellowish ivory bloom.

YVONNE ("Aurora" [*kewense* x *Thomsonii*] x *Griffithianum*). Introduced by Rothschild, 1931 or earlier.

While this rhododendron is a relatively old hybrid it is not extensively grown. The growth is exceptionally vigorous and a 14-16 years old specimen will soon reach tree-like proportions as it is now 8-9 feet tall. The bloom occurs in later May and remains at its peak for approximately only a week. The trusses are huge, pale pinkish, and are spectacular against an early morning or late evening sun. The protection of partial shade at least is needed and its bloom does not stand rain well. With plenty of usable space this is a fine specimen to have.

VANESSA ("Soulbut" [*Souliei* x *Fortunei* var.] x *Griersonianum*). Introduced by McLaren in 1929.

There are several forms of this rhododendron and all are good. "Vanessa" has not been extensively grown in this area, nevertheless it is well worthwhile. My specimen is a so-called Var. B, which is hardy, grows vigorously in a moderate bushy form and produces a rose-pink flower in May and early June

that is resistant to much damage by rain. The only disagreeable feature is the extremely sticky nature of the blooms which makes removal of the old flowers very tedious.

W. B. HUTCHINSON
Seattle, Washington

In selecting ten of the most useful rhododendrons for the average garden, there can be many different opinions. Much depends on the location, the exposure, color of the house, the taste of the owner, and the plant material they are to grow with.

There is so much to select from that there is no excuse for using plants not suited for the purpose or put in a place where they will not thrive. However well the plants are arranged for color and size it is not a success unless they are of the right growing habit to develop into a really permanent and thriving group to go on for years without crowding, rearranging, pruning and replacing. Some of the new slow-growing types and some that will stand more sun than the old garden varieties will make this easy to accomplish, if the plants are studied and a fairly good idea for a permanent picture is kept in mind.

Probably the most common cause for spoiling even a well-arranged planting is overcrowding of plants that should not be crowded, but have a chance to develop their own individual beauty. There are plenty of plants that are good in a mass and should be grown that way, but they should be selected for that purpose.

To take about five of the taller types I will place the old LODER'S WHITE first for a medium-sized garden. It cannot be surpassed by any shrub. It should be free to develop on at least three sides so it will keep its foliage to the ground. It will hold its shape and develop into a real specimen more easily and more satisfactorily than anything I know of at the present time.

The plant and its bloom is fairly well known. But what this hybrid can do is not often seen or well enough known. To crowd it on the sides will ruin its very finest points.

ALBATROSS should be grown more and be better known. It is late and a very clear,

waxy white of good substance and keeping quality. It is tall and needs other plants to go with it.

CAREX WHITE is of a different type and can be very useful if placed well. It blooms in March and has long, waxy, bell-shaped flowers that stand the rain well and last for the longest time. It is a hybrid from *Fargesii*, but a much better and more dependable garden plant. There is also a pink form. They have small, thick leaves, grow rather tall, and do not spread out so much that they will crowd out other plants that grow among them.

The *Maddenii* x *cinnabarinum* hybrids are also of tall, slender growth and do not make a heavy shade; the gray-green foliage of both these and the "Carex" forms make a fine setting for pink *speciosum* lilies which thrive well in a rhododendron bed but would soon be crowded out by dense foliage. The Hellebores, *Anemone nemorosa* and Hepaticas, small bulbs that like to grow and be left alone, will thrive in such a setting, so here is a break for the small garden which doesn't have room or a special place for a lot of things. LADY CHAMBERLAIN is probably the best known of this group, but there are many more, and others to come. They are certainly useful plants and make excellent, graceful flower arrangements.

Of the *campylocarpum* hybrids I like UNIQUE. The clear, creamy yellow flowers can be used with many other plants. The neat, rich green foliage and the growing habit is exceptionally good. It can be planted close to steps and walks and will hold its shape for years without much attention. If not crowded it will stay low and hold its branches close to the ground.

For five low-growing varieties of the newer types there is a wide selection. The *Williamsianum* hybrids have very many useful varieties for a small garden. They make a neat group, need very little care, and are bonehardy and permanent. BOW BELLS is probably the best known and most popular in the nurseries and is a fine dependable plant. I like DOR-MOUSE even better. It has thicker foliage,

is a better grower and makes a very neat bush. The flowers are of good substance and a clear pleasing pink. The plant cannot be much improved although the name could.

ADRASTIA is lower-growing, rather flat and spreading. Its cherry-red buds are very interesting all winter if planted close to a walk or picture window. Scarce yet but will soon be in the trade. A hybrid between *Williamsianum* and *neriiflorum*, introduced 1941.

CILPINENSE, an entirely different plant, is about the same growing habit and usefulness as the *Williamsianum* hybrid. It blooms in March and is a hardy plant. There is plenty of it in the trade, and it is not expensive for a slow-growing plant. It is always good looking, summer and winter. A group of five of them has been in Mr. Graham's garden in Broadmoor for fifteen years. Just moved once a little apart and still a very fine, neat-looking planting. There are not five of a kind nor do they stay fifteen years in that garden unless they are good.

There are some new, low-growing red hybrids from *haematodes*, *didymum* and *repens*. Some of these will be late dark reds. Some have very fine foliage and will add new pictures and ideas to work with. MAYDAY is now fairly well known. It is a neat plant up to two feet in time, with rich scarlet flowers. The parentage is *haematodes* and *Griersonianum*.

One I like well of this type is BEACON ("Fabia" x "Arthur Osborn"). It is much better than either of its parents. Rich gray-green foliage, low, almost creeping habit, and can be trained to fit almost anywhere among rocks and over logs. It is beautiful in winter with the long slender buds peeking up all over. The very dark, long, bell-shaped flowers show up well among slow-growing evergreens.

E. OSTBO

Bellevue, Washington

The following ten rhododendrons are not necessarily the top ten rhododendrons; such a selection would be indeed difficult, as tastes vary and there are so many hundreds of varieties to choose from. Rather, they have

been selected from those which I grow and with which I am familiar. They are fine rhododendrons and several of them are outstanding. Also, for the most part they are available at our West Coast nurseries.

AZOR: A *Griersonianum* x *discolor* hybrid introduced in England in 1933 by Stevenson. It won the Award of Merit in England in 1933. Its British merit rating is three stars and the hardiness rating is B. On the west coast of the United States there are a number of varieties of the "Azor" cross available. Generally they are good, but a few are outstanding. The one I have is a bright flamingo pink with orange throat and stamens. The individual flowers average four inches in diameter, in large clusters of about fifteen flowers measuring from 9-10 inches across. This particular good form has been selected for propagation from a number of seedlings raised by a local nursery. These were from seed sent by F. J. Rose, the head gardener of the famous Townhill Park Gardens near Southampton, England, to Halfdan Lem of Lem Nursery in 1939. This outstanding hybrid blooms over a long period, usually from the latter part of May and on into June. Its huge trusses literally cover the plant. The foliage is an attractive bright dark green, with a somewhat narrow leaf $2\frac{1}{2}$ inches wide and 8 inches long. Its habit of growth is slightly sprawly, which is inherited from *Griersonianum*. In my opinion it is one of the best of the taller rhododendrons and is of easy culture. It is best grown in half shade.

BLUE TIT: This rockery type rhododendron is a cross between *impeditum* and *Augustini*. It was raised by J. C. Williams in England and first exhibited in 1933. It has a four-star rating and is classed B in hardiness. The plant is compact and close growing and will reach a maximum size of $3-3\frac{1}{2}$ feet.

My planting of "Blue Tit" is in full sun with a western exposure. Although a difficult exposure for a rhododendron, it seems well able to adjust itself to these surroundings and to thrive. The small deep blue flowers fairly well cover the plant in the latter part of April.

While the leaves are small, it nevertheless is a delightful foliage plant for landscaping.

"Blue Tit" can effectively be planted with its companion plants, "Bluebird," "Blue Diamond" and "Electra." All are *Augustini* hybrids of dwarf habit with good blue flowers. "Blue Tit" is the lowest-growing of the four, while "Electra" is the tallest.

BOW BELLS: A popular and well-known rhododendron and considered by many as one of the best all-around hybrids. The parentage is "Corona" x *Williamsianum*, which resulted in a combination that has taken the best qualities from both parents. It was first flowered and exhibited by Rothschild in England in 1934. It won the AM in 1935. Its hardiness rating is B. Why it has been given only a two-star merit rating I cannot understand. Four stars would be a fairer rating. Perhaps it does not perform in the British Isles as it does on our west coast. Its 2½-inch bell-shaped flowers are of a bright clear pink that fades but slightly. It is very floriferous and will have about nine flowers in a cluster. It blooms here in late April and early May. The foliage is an attractive egg shape resembling *Williamsianum*, but of considerably larger size. The interesting young growth is of a chocolate-bronze color. "Bow Bells" is a good plant for landscaping since it will tolerate considerable exposure to the sun, and does not grow too tall for the average home. About six feet is its eventual height.

As to the hardiness of "Bow Bells"—during the winter of 1950 there was a cold snap which lasted from January 3rd through February 3rd; during this time the temperature dropped to a minimum of four degrees below zero on January 25th, three below on January 31st and two below on February 1st. Fortunately, there were from six to ten inches of snow on the ground. The three-foot plant of "Bow Bells" which I have survived the freezing weather without loss or injury to the flower buds, although in an exposed location without protection of any kind.

DAY DREAM: A cross between "Lady Bessborough" and *Griersonianum*. It was first flowered by Rothschild and introduced in

1936, and won the AM in 1940. The hardiness rating is C and it is a two-star rhododendron.

The three seedlings which I have of this hybrid were obtained from the Lem Nursery and flowered for the first time in 1947. Halfdan Lem had a number of seedlings of this cross that he grew from seed sent him by F. J. Rose of Townhill Park Gardens, England, in 1939. The offspring from the cross have been quite consistent and are nearly identical, with the exception of one which was considerably superior. It was this one that won "Best Hybrid Rhododendron Plant in Bloom" for Mr. Humphrey of Far West Nursery at the Rhododendron Show held in the Arboretum on May 4, 1946. Oddly enough the award plant was, I believe, killed by frost during the January 1950 freeze, but fortunately scions had been obtained by Clarence Prentice of the Prentice Nursery before the plant died. These were grafted and propagated and plants of this superior form of "Day Dream" will soon be available. As I recall it, the brilliant, deep crimson, funnel-shaped flowers of the Award plant were three and a half inches in diameter or larger. The loose trusses were a good eight inches across, containing some fifteen blooms. Every branch terminated in a flower head. A truly marvelous sight. I believe that if this superior form of "Day Dream" were entered in the British trials at Wisley, it would win an F. C. C. and that it would be rated higher than two stars. While the plant growth is of a sprawly nature, its only real fault would be its tenderness below 12° F. It is a plant for the woodland garden and would probably reach a height of from eight to ten feet ultimately. It blooms young and is well worth raising, provided some winter protection is given where the temperature may drop below 12 degrees.

ELIZABETH: In the hybrid "Elizabeth" we have that rare combination that makes for a perfect rhododendron, a fully compact dwarf plant with attractive foliage and flowers as fine as any in the genus. Although only introduced in 1939 by Aberconway, it already has a four-star rating, won the AM in 1939 and the F.C.C. in 1943. It is a *Griersonianum*-

repens cross; *repens* furnished the hardiness and dwarf characteristics, while *Griersonianum* provided the wealth and size of blooms. The bright, blood-red flowers measure from 2½ to 3 inches wide on a plant which would eventually grow to a height of three to four feet. It is not uncommon to obtain blooms on a three-year grafted plant. I purchased my plants two years ago as three-year-old plants and they have bloomed each year since. They are not fastidious, as would be expected, having *repens* as a parent. The latter, I might add, is extremely difficult to grow on its own roots, but the combination with *Griersonianum* has changed this characteristic completely. Almost any location except against the south side of a building is suitable. Like all rhododendrons, ample humus and moisture should be provided. "Elizabeth" is highly desirable for all gardeners who can grow rhododendrons.

MARINUS KOSTER: Is another favorite rhododendron. Although it is rated C for hardiness, I have a plant of this variety which survived the blizzard in the winter of 1950.

This plant was introduced by M. Koster and Sons, Ltd., Boskoop, Holland. Peter Koster states that it was selected from a batch of seedlings. It is, no doubt, a progeny of "Pink Pearl" and closely related to "Betty Wormald"; Peter Koster produced both. The parentage of "Betty Wormald" is given as "George Hardy" x an unknown red. The unknown red is probably one of the "Doncaster" x *Griffithianum* hybrids, according to Frederick Street. "Marinus Koster" has large rich pink flowers with a deeper shading in the throat and small maroon blotch at the base. They come in late May. Its huge dome-shaped trusses are from ten to eleven inches across, with thirteen or fourteen flowers measuring from 4-4½ inches in diameter. It is small wonder that it received an AM in 1937 and the F. C. C. in 1948. The elliptic foliage resembling "Pink Pearl" is an attractive, very dark green. Its ability to bloom consistently in almost any location year after year makes it a high favorite with those who grow it.

MARGARET DUNN: First raised at Townhill and introduced by Lord Swaythling in 1946, it also gained the AM in the same year. This *discolor* x "Fabia" hybrid is a two-star rhododendron rated B in hardiness. The plant which I have is a seedling and bloomed for the first time last May. Like the Award of Merit plant, it has the "Fabia" color, flushed apricot and pink. The flowers were 3½ inches in diameter and the trusses large. The foliage of medium green color resembles *discolor* more than it does "Fabia." They are 2 inches wide and 9 inches long, without indumentum on the leaves. I should judge that the plant would reach a height of 8-10 feet at maturity. "Margaret Dunn" is a very desirable rhododendron for woodland planting.

ROSY MORN: Is a two-star rhododendron of a *Souliei* x *Loderi* origin. It was introduced by White and won the AM in 1931. Its British rating for hardiness is C. I flowered a seedling of this cross late last May. It has delicate shell-pink, saucer-shaped flowers nearly four inches in diameter in lax clusters. The foliage is the typical rounded *Souliei* type and makes an attractive plant of medium height. This plant also survived four degrees below zero in the winter of 1949-50 with no ill effects.

SPINULOSUM: Is a cross between the unusual *spinuliferum* and the popular *racemosum*. It was first propagated by Kew Gardens, England, in 1926. It is a two-star rockery rhododendron with the hardiness rating of C. The plants I have of *R. spinulosum* are from the type plant. The small, apple-pink flowers are borne in great profusion on long, sweeping branches. The foliage is attractive and resembles that of *R. racemosum*. Its shape and height of from 3½ to 4 feet would make it most desirable for landscaping in any location in the garden. *Spinulosum* in my garden was considerably damaged by frost in the winter of 1949-50. It was cut back to the ground, but new growth from below the ground line has now reached a height of two and a half feet and is growing vigorously. Since there is considerable color variation in this hybrid,

it should be selected while in bloom for the deepest pink.

VULCAN: Waterer Sons and Crisp introduced the brick-red "Vulcan" in 1938. This cross, having the parents "Mars" x *Griersonianum*, is a two-star rhododendron with a hardiness rating of B. The medium-height plant has very dark green foliage. The leaves are two inches wide and six inches long. I have a seedling of "Vulcan," now twelve years old and nearly four feet high, upright in growth habit. It does not have such large flowers as the original plants imported from England. They measure not more than two inches across in an open six-inch truss and bloom as late as July 15. The color of the flowers is darker, and it is a rather shy bloomer, much more so than the original. The fact that it survived without protection our coldest temperature of four below zero, the coldest in forty years of weather bureau history, has kept me from discarding the plant. But that is one of the risks in raising an untried seedling. The original hybrid is a fine rhododendron and clones of it should be obtained by all means.

HARRY R. MADISON
Seattle, Washington

After being requested to comment upon a limited number of the finer "new" rhododendrons, I have chosen merely to discuss a few varieties which we have grown in our gardens for a sufficient number of years and for which we can vouch through experience as to qualities that make them worthy of honorable mention. There are scores of others, equally meritorious, that could be added to this list.

I am presuming that the "newer" varieties encompass those which have come into general cultivation in, say, roughly, the last twenty-five years; this, to be sure, excludes many older varieties which, up to this point at least, still stand par excellence.

Beginning with the reds, the lady with the twelve-syllable name, THE HONORABLE JEAN MARIE de MONTAGUE, heads the list. A medium-sized bush, compact in growth, indifferent to shade or full exposure, its dark

green leaves make a good subject for any landscape, and its flowers have almost the identical color and sheen of "Britannia," not quite so large, perhaps, and a trifle deeper in color. Blooms in profusion, midseason. This plant will make garden competition for anything that grows. Why it has not been rated with three or four stars is hard to understand.

ROMANY CHAL ("Moser's Maroon" x *eriogynum*). A rather rugged grower, listed as orange-scarlet, the form we grow is more nearly blood red. It forms an enormous truss of about twenty-five flowers. Blooms about mid-June. As this is a seminal-group variety, care should be used in selecting the form since, although the plants are nearly all good, some are much better than others.

Going to a smaller shrub, GOLDEN HORN, Exbury form (*dichroanthum* x *Elliot-tii*); don't be misled by the name—it is not golden, but scarlet fading to deep orange, very compact, built on blocky lines and hence less twiggy than "Fabia," for example, and much admired by those who like a smaller plant. Has proven so far to be hardy, and blooms quite freely around the first of June.

Another red that is hard to overlook is DAVID. Medium tall, dark leaves, flower much like "Earl of Athlone," but habit of growth much better, and blooms a little later. Blood red in color. This was first indicated simply as a "Hugh Koster" hybrid but is now listed as "Hugh Koster" x *neriiflorum*, and it may be there is more than one form; however, those in cultivation in this area seem to be uniform as though propagated from one clon. Mid-season bloom.

Among the yellows, LETTY EDWARDS should be placed near the top. One of the few *campylocarpum* hybrids that can take full sun, a pale yellow; a spreading bush with leaves that bear more resemblance to *Fortunei* than its other parent; covers itself with flowers the latter part of April or the first of May. A must for anyone who likes the softer colors.

MRS. W. C. SLOCOCK, our favorite among the Slocock *campylocarpum* hybrids. In size medium, compact, three to five feet,

neatly spreading; should have some shade. Whether this is a salmon pink or a light yellow depends on when you see the flower; it comes out in a small pink truss as dainty as an orchid corsage, and gradually fades to yellow. It is quite a sight when the bush is covered with trusses in different stages of bloom. About May 1.

MRS. BETTY ROBINSON.* This variety is selected for a two-fold reason; first, it is an excellent plant and, second, as a protest against the unjust treatment it has received at the hands of the experts. Listed in the 1938 "Year Book" as "white, tinged pink, small dark blotch," but thrown out completely from the 1947 "Handbook," it was resurrected in the 1952 "Handbook," but had aged in the process to a cream, tinged pink, and had lost its dark blotch. It is to be hoped that by 1957, when the next "Handbook" comes out, it will have mellowed a little more and be given a place among the finer yellow rhododendrons where it belongs. It is possible there may be other forms, although we received our plants from two sources, three from England and one from Canada, and they all turned out to be alike—light yellow, with a broken blotch or heavy spots on the inside, tinged with a reddish pink on the outside, giving the over-all impression of deep yellow. We called the description discrepancies to the attention of our British supplier and were informed that he received the plants from the originator, and the yellow form was the correct one. It is a compact shrub, leaves green and somewhat puckered on the order of "Mrs. Lindsay Smith" and its hybrids. Blooms midseason; should have light shade. Certainly one of the better yellows to date.

BERRYROSE var. BELVEDERE (*dichroanthum* x "Doncaster"). As might be supposed from its parentage, a low-growing plant, with a flower of a salmon-pink to orange combination hard to describe, and one which always attracts attention. This variety was much admired at the Sunningdale Nursery by the then Prince of Wales (now Duke of

Windsor) and the plant was named after his estate, Fort Belvedere. One of the little gems, and easy to grow. Midseason.

SUSAN (*campanulatum* x *Fortunei*). For those who desire a choice lavender, there should be no hesitation in recommending this one. A little slow to start blooming, it makes up for it once it gets the idea. This is claimed to be the most nearly blue of the broadleaf rhododendrons. That may be quite misleading to anyone who has not seen the flower, lest the idea is generated it is blue. It has a pleasing mauve tone which adds contrast to the sharper colors, and it would help to complement many of the more striking varieties. It wears well. The leaves resemble *Fortunei* to quite an extent on the upper surface with an almost smooth brown appearance underneath. A fine rhododendron. Habit medium size and quite spreading. Blooms late April or early May. Very hardy.

Not to neglect the pinks completely, of which there are many superb forms, what about JAN DEKENS, one of the fine new Dutch varieties created by Van Nes? A rich, deep pink with enormous flowers, fimbriated as in "Corry Koster," but larger and darker in color. This is a thick-branched, vigorous, spreading bush with large, wide leaves; an excellent foliage plant in shaded locations and a free bloomer in full sun.

BEN NELSON
Suquamish, Wash.

The results of this poll indicate that four hybrids were mentioned in three out of the six articles, namely "Blue Diamond" and "Blue Tit," cilpinense and "Lady Chamberlain"; evidently they rate high in popularity.

Six or seven others received mention twice, including "Bow Bells," "Day Dream," "Electra," "Lady Bessborough," "Lady Rosebery" and "Naomi." A total of fifty hybrids have been discussed, which should provide a wide and useful choice for most gardens. We believe that almost all are available from some nurseries at least, in Washington or Oregon.

*There is some uncertainty as to proper spelling of this name, sometimes given as Robertson.

Pruning Ornamental Shrubs

BRYAN TAYLOR

PRUNING! What joy—despair—pride the word brings to the gardener. Joy to those who follow Solomon's "Spare the rod and spoil the child," hacking and chopping at everything. Despair to the young amateur, delicately snipping here and there. Pride to the experienced gardener, boldly cutting out here, shortening there, strong in the knowledge of a job well done.

Let us try and simplify the operation so that the "logger" and the young amateur can rival the expert.

First, remember that there are many shrubs that will grow happily for years without pruning and that the only reasons for pruning are:

1. To alter the line or to improve the shape of the shrub; e.g., taking out double leaders on trees, or cutting back a branch on a shrub where it is throwing the whole out of balance.
2. As surgery to improve the health of the shrub; e.g., cutting stems which are crossing, rubbing, or crowding the center.
3. To improve the quality or size of the flowers; e.g., as with the pruning of roses.

Obviously, therefore, the treatment of each shrub is a matter of careful, individual attention. The aim of our pruning operation is to lead the shrub into its natural outline or growth. So we cannot force a shrub, whose natural spread is eight feet, into a four-foot-wide space, particularly as a rule that must be remembered states: "The harder the cut the stronger the resulting growth." To give an example of this, we prune a weak-growing rose hard back to four or five inches to promote stronger growth, but a strong-growing rose, like "Tallyho," we prune lightly to discourage even stronger growth.

The most difficult questions the amateur has to decide are:

1. When to prune?

*Mr. Taylor's name is almost synonymous with "pruning," according to the many Garden Clubs and Arboretum Units which have asked and received his lucid advice on the subject. We are happy to publish his "basic rules" for all our readers.

2. What wood to cut away?

The answers to these are given by the time at which the shrub flowers, and whether on the old wood or on the new growth of the current season; then we know the time to prune, and also know which wood is to be cut out or back.

Examples of this are:

1. *Hydrangea paniculata grandiflora*: When does it flower? July to September. Does it flower on new wood or old? New. Therefore, we prune it in late February by cutting back last year's shoots to within three or four inches of the old wood. Note: We do not prune late summer and fall-flowering shrubs immediately after flowering because this would promote new growth at once, which would be destroyed by the first frost.

2. *Hydrangea macrophylla (opuloides)*: When does it flower? July to October. Does it flower on new wood or old? Last year's wood. So we prune it in late February by cutting out the older wood and leaving last summer's new growth untouched.

3. *Philadelphus*: When does it flower? May to June. Does it flower on new wood or old? Last year's wood. Thus we prune it after flowering by cutting back the flowering stems to strong new side growths and removing any old and worn-out stems at ground level.

4. *Choisya ternata*: When does it flower? April to May and intermittently throughout the summer. Does it flower on new wood or old? Mainly on last year's wood. So we prune it at flowering time by cutting back the flowering stems to keep it bushy and compact.

We can simplify this by dividing pruning in the Puget Sound area into the following classes:

A. *Deciduous shrubs flowering in winter, spring and early summer on last year's wood and older*:

These are pruned immediately after flowering by cutting back the flowering wood to within a few inches of the older

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Evergreen Ground Covers

CATHERINE C. CLARKE *

DURING the last several years, garden planners seem to have shifted the emphasis from the perennial border to the effective use of flowering shrubs, by means of which we in this part of the world can enjoy bloom throughout the year. Some of this change is due to a change of styles, some of it to the necessity of maintaining attractive plantings with a minimum of labor.

With this change has come an increased interest in ground covers, not just plants for a rock garden, or for that "hot dry bank," but attractive flowering or berried vines or tiny shrubs to be planted under or around larger shrubs to serve the triple purpose of covering the soil, conserving moisture and keeping down weeds.

The needs of each garden being varied according to its size and location, city or country, one must choose with some care a ground cover that will enhance rather than overwhelm the other planting, as some of the coarser plants which can give a very handsome effect at a distance may be overpowering if seen at close range.

Specific lists of ground covers seem hard to find, and yet there is a multiplicity of plants, both native and cultivated, from here and from the eastern part of the country, that are admirably suited to our use and to our climate. One word of caution in regard to plant material from the Atlantic states. Too often the cultural directions suggest deep shade, but here, where our sun is not so hot, these plants need an open, sunny situation with a little shade.

The following somewhat limited list of evergreen ground covers, all of which are found growing well and easily in and around Seattle, will give some idea of the variety and profusion of these charming garden aids.

Of the sun loving plants, both *Arctostaphy-*

los Uva-ursi, kinnikinnick, and *Cotoneaster humifusa* like a hot, dry place and will flower and fruit abundantly only if grown in poor soil. Both are small-leaved vines with white flowers and red berries, the former about five inches high, the latter hugging the ground closely. Both grow rapidly and require no care.

Linnaea borealis, twin-flower, a native of our own woods, is a good cover. A small-leaved vine, bearing fragrant pink bells in pairs on 3-inch stems, it grows more slowly but flowers freely if grown in the sun; in shade, one small plant will cover an area four feet square in two years, but the flowers will be sparse.

Aubrieta and *Phlox subulata* may be said to be semi-evergreen, but their grey-green foliage is shabby looking in winter though extremely colorful in spring, when they flower so profusely as to form mats of brilliant color.

Halimicistus Sahucii creates a low mound about six inches high and two to three feet in diameter, with tiny lance-like leaves of bluish-green about $\frac{3}{4}$ inch long. It has the typical cistus flower, white, an inch across, blooms in June and July and the foliage darkens almost to bronze in winter.

There are a number of good low-growing *Penstemons*, notably *Cardwellii*, *Menziesii*, *Scouleri* and *pinifolius*, none over six inches in height, lanceolate reseda-green leaves varying from an inch in length to the tiny heather-like foliage of *pinifolius*. Flowers are bell-shaped, purple, lavender, white, or red in the last named.

Dryas Suendermannii, a low-growing plant, the dark green, oak-like leaves have heavy veins, the round white flower develops a fluffy seed ball rather like *Anemone Pulsatilla*.

Halimium ocymoides has a somewhat erect habit, the tiny grey-green leaves giving the plant a feathery appearance; flowers in July, bright yellow with maroon eyes.

Cotyledon oppositifolium forms a mat of flat rosettes, with bright green leaves an inch long and tassels of yellow on 4- to 5-inch stems.

*We welcome Mrs. Caspar Clarke to the pages of the BULLETIN, although no stranger to its composition, having been a member of the Editorial Board since 1951.

Ceanothus thyrsiflorus repens and *C. gloriosus* have oblong, serrated evergreen leaves 1 to 1½ inches long; the flowers of the former are blue, in narrow panicles about 2 inches long.

Thymus Serpyllum grows rapidly into a fragrant grey-green carpet approximately an inch high with tiny rosy purple flowers. There are many other thymes equally good, all to be grown in full sun, such as *vulgaris*, *pectinatus* and *villosus*.

Of the very low-growing, summer-blooming heathers, perhaps the most satisfactory are *Calluna vulgaris* "Mrs. Ronald Gray" with purple flowers, "Mrs. Pat," a pink-tipped variety, and *nana*, *minima* and *pygmaea* which have the appearance of moss.

While *Juniperus communis montana* is a low shrub, its feathery, blue-green branches hug the ground and form a most satisfactory cover, each plant having a spread of 3 to 4 feet. *J. procumbens* has a spread of 5 to 12 feet, while *J. horizontalis Douglasii* has trailing steel-blue foliage that turns purple in the fall.

For situations where there is both sun and shade, particularly protection from full afternoon sun, the list of available ground covers is far larger.

Acaena hugs the ground and has leaves that look like miniature rose leaves; *A. microphylla* has dark-green foliage, *A. glauca* blue-grey foliage. The flowers are inconspicuous but are followed by decorative round burrs.

Ajuga reptans with dark green erect leaves 3 inches long, flower spikes 6 inches high in white or deep blue, is a rapidly spreading creeper and needs to be kept in bounds.

Chimaphila maculata, pipsissewa, forms rosettes of dark 2-inch green leaves that have mottling along the veins, with 2 or 3 nodding fragrant flowers on stems a few inches tall.

Coptis laciniata, called gold-thread because of the color and shape of the root, has leaves resembling a small buttercup leaf, is a low-growing, stemless plant with solitary white flowers.

Cornus canadensis, bunchberry, has slender running stems with stalks bearing a whorl of

oval pointed leaves. The white bract surrounding the tiny flower indicates it is a member of the dogwood family. The fruit is a compact cluster of bright red berries.

Cotoneaster humifusa, as mentioned before, grows rapidly in shade but has few flowers or fruits. *C. microphylla glacialis* is a smaller alpine variety.

Douglasia laevigata forms mats of narrow, greenish-grey leaves, hidden at blooming time by clear, pink flowers. It needs a well-drained soil and full exposure to the sun.

Epigaea repens, trailing arbutus, is a creeping prostrate undershrub with broadly oval leaves 2 inches long, the fragrant pink flowers clustering in the leaf axils.

Euonymus Fortunei colorata has inch-long leaves that turn a purplish red in the fall and remain so all winter.

Galax aphylla, a plant with shiny, veined heart-shaped leaves 2 inches wide borne on 5-inch stems, carries its tiny star-shaped white flowers on spikes 10 to 12 inches high. The leaves turn reddish bronze in fall. It increases slowly.

Gaultheria procumbens, wintergreen, creeps underground, sending up stems a few inches high with oval leaves that are light green below, darker and shiny above. The solitary nodding white flowers occur in the leaf axils and are followed by a fleshy red berry. *G. Miqueliana* and *G. cuneata* have white berries and a textured leaf resembling kinnikinnick.

Of the heathers, the forms of *Erica carnea* prefer some shade. They are winter blooming and such low-growing varieties as "Springwood" and "Springwood Pink," "King George" and *Vivellii* form large 6-inch high mats with a profusion of bloom. *Erica vagans*, the Cornish heath, attains a height of 10-12 inches; "Mrs. Maxwell," a shrubbier form, has the brightest pink blooms; *nana alba* is the best of the white varieties.

Heuchera glabella, a native plant, has blunt-toothed broad leaves and many tiny flowers branching from 12-inch stalks. If planted in the sun the leaves turn red in fall. *H. sanguinea* is the coral bells with bright pink flowers.

There are a number of the *Hypericums* that

are smaller and more attractive than the rather coarse St. John's Wort one usually sees. *H. polyphyllum* makes tufts of slender shoots 6 inches long, and *H. reptans* makes a trailing mat of vivid green. Both have large yellow flowers.

Leucothoe Keiskei is a plant with glossy pointed leaves on 6-inch stems, the white flowers are narrow bell-shaped; the foliage turns crimson in the fall.

Lithospermum fruticosum is a trailing subshrub, about 6 inches high, with tiny lance-shaped, blue-green leaves. It bears a profusion of small, brilliant blue flowers from June to September.

Linnaea borealis grows very rapidly in shade but has few flowers.

Mitchella repens, partridge berry, is a small creeper with 1/2-inch round leaves marked with lighter green veins; the twin pale pink tubular fragrant blossoms are succeeded by red berries.

Pachistima Canbyi grows 6-10 inches high, has oval dark green to bronze leaves, the reddish flowers appear in April and May.

Pachysandra terminalis has thick glossy foliage and forms a dense mat of coarsely-toothed leaves 6 inches high; the flowers are carried in small white spikes.

Polygonum vacciniifolium, a tufted plant with trailing and creeping branches, bears elongated flower clusters of bright pink in September and October.

Pyrola elliptica is a tufted plant of roundish basal leaves that sends up a slender 4-inch stalk bearing nodding white flowers.

Rosa Wichuraiana, a semi-evergreen rose, with lustrous leaves and single white 2-inch flowers, is useful for covering banks because of its procumbent habit.

Sarcococca ruscifolia and *S. Hookeriana humilis* are low-growing shrubs with handsome shiny foliage, leaves about 2 inches long, and small fragrant flowers in February.

Shortia galacifolia is an evergreen stemless plant having round, bright green leathery leaves with wavy margins. The inch-wide, fringed white blooms are bell-shaped and borne on 3-inch stems. *S. uniflora grandiflora*

has heart-shaped leaves and pink flowers twice the size of the white species.

There are hundreds of species and varieties of *Saxifraga* varying from the moss-like *S. oppositifolia* to the large-leaved *S. Stracheyi*, many of which form satisfactory ground covers.

Soldanella alpina and *S. minima* form compact masses of bright green, thick, round leaves and in April send up slender 5-inch stems surmounted by nodding fringed lavender blooms 1/2 inch in diameter.

Taxus baccata, English yew, has some prostrate forms such as *adpressa* and *repandens* with elongated and ramified branches with dull bluish-green foliage. *T. cuspidata minima* only reaches a height of 8 inches, while *aurescens* forms a shrub one foot tall.

Vaccinium Vitis-idaea minus, the mountain cranberry, is a tiny shrub 4 to 6 inches tall. The leaves are 3/4 inch long, the pinkish flowers appear in May and are followed by dark red berries.

Vinca minor, myrtle, is a trailing vine with dark green shiny leaves and erect flower stems with blossoms in colors ranging from dark purple to white. The variety *floreplena* with double flowers includes one form with white blooms that are pink-centered.

Violets make an excellent ground cover in light sandy soil. The little native yellow violet *V. sempervirens* with light green leaves, and *V. odorata*, the sweet-scented violet, both have leaves that are evergreen.

Asarum canadense, wild ginger, likes moist shade. Its three-inch, heart-shaped leaves grow on stems 6-8 inches tall; the reddish-brown flowers appear at ground level and have a spicy aromatic odor.

Nothing can create a more lovely evergreen carpet than the hardy *Cyclamen* if several varieties are used. They require a light soil and full shade. *C. coum* is the earliest to bloom, the small purple flowers appearing in January above the clear green leaves. *C. europaeum* has marbled leaves and very fragrant bright pink blooms. *C. neapolitanum*

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Fuchsias for All

GLADYS YORK *

WHY do we grow fuchsias? Because it's love—love at first sight. We can no more help ourselves than the teen-age puppy who simply must turn somersaults at the feet of his first blonde. Each year we make a promise to ourselves that we will wait to see if the new introductions will prove themselves worthy of our garden before we waste space on them. But—when we see the new ones, each is a distinct challenge to the fuchsia fan. If the plant isn't doing well, where it is seen, he knows he could make it grow; after all, his thumbs are green. If it is doing well then, of course, he must have it—well, because it grows so beautifully. If it has huge luscious blossoms and the growth is inferior, it is so lovely he just must have it anyway. He may pick and choose at first, but before the season is over, he has all the new ones out that year. That doesn't mean he will keep them all forever. There are always a few old favorites that will have a spot in his garden and he will gather a few more favorites as the years pass but if the new ones do not do well, out they go—or else just disappear after being left to fend for themselves.

Another reason we grow fuchsias is because of their long period of blooming. What other flower can match them? Blooms from April until December and if there is no frost that year there will be some blooms the entire year! It entirely spoils one for the flower which blooms a month and is gone until next year.

The main reason for their popularity, however, is their adaptability. They can be grown into any shape, form or way to fit into every type of garden. Some may be used as foundation shrubs or as small specimens in front of the foundation planting. They serve a myriad of uses from potted plants to large shrubs; from vines to hanging baskets. A fuchsia is at

your service; it can be grown and trained as you wish it to grow, not as *it* wishes to grow. They may be pinched and shaped into any form. They are perfectly adaptable and will give a superb performance under every varying condition provided the grower takes care to supply a few basic fundamentals.

A great many things should be taken into consideration when choosing a plant for a specific place in the garden. One must think of the type of fuchsia to fit the type of house, garden and location; the habit of the one chosen is of vast importance in relation to the spot to be landscaped; the color of the flower, the shape, color and size of the foliage surrounding; will it stand the sun or the shade; do you wish to grow it as a bush or upright. These and many other factors should be thought of when purchasing your plant. But the fuchsia offers a great number of types and habits and is therefore readily used in many places for many situations.

By careful selections and consulting with your nurseryman as to the habits of the different varieties, the many following functions will give the maximum of pleasure in growing your fuchsias.

Potted—As potted plants, fuchsias can change the entire appearance of a porch, conservatory or lathed-over area. They can be shifted to form a different picture or find the position in which they are most fitted to do their best. Most catalogs will tell in their descriptions whether it's a potting or bush type. In a nursery you can spot them yourself by their foliage. It is usually dark green and smaller than the taller types. Even when they are very small the little plants will show the tendency to be bush or ball shape, and more self-branching. Among some of the good old favorites are "G. Monk," "Winston Churchill," "Hollydale," "Virginia Bruce," "Abundance," "Lord Byron" and "Black Prince," which is the one sold by the florists in such profusion each spring.

Tubbed Plants—Most fuchsias can be grown

*Mrs. Frank York, with her husband, operates the York Gardens, Seal Rock, Oregon, where they have a "remarkable collection of Fuchsias beautifully displayed in a most unusual manner as a part of a woodland planting."

in this manner. Some will require a great deal more fertilizer and water than others. You will find which ones in your work with them. Some, in order to keep up their green, tender tip growth, will take liquid fertilizer almost every day. You will find this type of fuchsia giving truly unbelievable quantities of blooms. One of the handy features of this manner of growing them is the way in which they can be shown to advantage; and moved if they are not doing their best in one location. The two things that are absolute musts in this system of growing are: never under any circumstances let the plant get dry. Second, give plenty of fertilizer. Allowing them to become dry will cost you your buds and blooms, and set the plant back at least six weeks, if you can ever bring it back. Sometimes it is better to start all over again. Hot, dry weather is the time to be particularly careful. When watering, watch that you water the foliage as well as the roots. Morning watering is always best for any flowers, as they will not have the shock of going into the cool evening watered down with cool water after a hot day. This is so often the cause of bud blast. The buds will dry up rather than open.

Foundation Plants—A high foundation or empty space below windows may be tied into the landscape through the use of fuchsias. This is true in many cities where tall homes are built close together with a walk leading to the back. Not many plants will grow here as the light is bad. Fuchsias will take it.

Specimen Plants—There are many places in every yard where there is need for a specimen plant; a tall blank wall, a tree trunk at the corner of the yard where the background is composed of either a plain fence or a grouping of non-blossoming shrubs. Here a specimen fuchsia stands out to good advantage. The fuchsia selected must be carefully chosen as to color and length of blossoming period as well as time of blooming. Careful training of the plant by pinching and use of fertilizer should be practiced to fit the place selected and bloom at the right period desired.

Borders — “G. Monk,” “Tom Thumb,” “Little Beauty,” and now the new, colored

foliage “White Gold,” with its white blooms that stand full sun are among a few that make wonderful 1½-2-foot high borders. Plant the border as early as possible in the spring and trim carefully to form a uniform rounded border. By July you will have a border blooming for the rest of the summer and fall that will be a new treat.

Vines—While the fuchsia is not a true vine, it can be used very nicely in that way. It can either be trained by pinching and tying to climb a fence or wall to a height of eight to ten feet in a season; or it can be planted on a rock-retaining wall to cascade down and completely cover the wall under it in the summer with thousands of blooms. If the wall is in the sun remember to pick your red and common types. They will stand the heat. “Marinka,” while it does not trail so long, gives a mass of wonderful blooms. This is the one used on the Victoria, B. C., street lamp posts, in the full sun. “Inca Maiden” and “Galli Curci” are two of the common ones that will take frost and make a better showing each year as they get larger. They will stand down to 9 degrees (of which we have a record) and still make a sumptuous bouquet each summer.

Espalier — In growing a good espalier, choose the right plant when very small. One which has started three tips when about three inches high, or started to branch when that high. Keep in small pots until they reach the 4-inch pot stage and then they may be planted into the ground. Let the lower branches grow to about four feet each from the main stem before turning them up. The next ones to three feet and so on up. Fuchsias can make a good espalier in one year. It’s been done. “Trailing Autumn,” “Uncle Jules,” “Violet Gem,” “Muriel,” “Lens” and many others of the fast-growing type will espalier for your walls and fences.

Trailing Fuchsias—The trailing fuchsia may be used in many ways. There is just one thing to remember when you are growing them that is well to think of at the start. If you do not want to be standing over them all day long watering put them in something that holds

(Continued on Page 32)

The Arboretum Bulletin

VOL. XVII, No. 1 SEATTLE, WASH. SPRING, 1954

No part of this BULLETIN may be reprinted without the authority of the Arboretum Foundation.

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To keep memberships in the Arboretum Foundation in good standing, dues should be paid during the month payable. Active memberships more than three months in arrears will be dropped and THE BULLETIN will be discontinued.

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Notes and Comment

1954 Rhododendron Show

A Spring Rhododendron Show will be held by the Seattle Rhododendron Society beginning on Thursday, May the 6th, and running through Sunday, Mother's Day, which falls on the 9th of May. Again this year the Arboretum Foundation is co-sponsor with the Society for the event.

The Show will be staged beneath the south stand of the University of Washington Stadium where there is ample room, under cover, for many more exhibits than were shown last year. With this abundance of space it is anticipated that considerably more growers will enter the large planting class. The display in this class should surpass the excellent showing of 1953.

There will be several open classes in addition to the large group displays. Awards will be given for individual plants, cut trusses and arrangements featuring rhododendrons and azaleas. All judging will be in accordance with the American Rhododendron Society rules as the show will be fully accredited by that organization.

The major portion of the profit from the sale of admission tickets will go to the fund being raised for construction of a Floral Hall in the Arboretum. As such a hall will be for the use and benefit of all garden and horticultural groups, it is hoped that all their members and all those interested in gardening will support this show.

✓ ✓ ✓

The Foundation gratefully acknowledges the following contributions received since November, 1953:

Arboretum Unit No. 28, \$25.00, which sum is being used to purchase a set of 62 color slides of native eastern azaleas to add to the Arboretum's fast-growing collection. Arboretum Unit No. 41, "Frances Macbride," \$66.63, which has supplied the Arboretum with a pair of "Vocatron" units for inter-office communication. Arboretum Unit No. 1, \$95.00; Mrs. Edward Lincoln Smith, Seattle, \$25.00, to apply toward the maintenance of Azalea Way; a check for \$100.00 from Elizabeth Everett,

who said "this is for my appreciation and enjoyment of the Arboretum," and from far-away Maine a check for \$10.00 to apply on

the purchase of a new projector for color slides from Mrs. Beatrix Farrand, Reef Point Gardens, Bar Harbor.

Christmas Flowers in the Arboretum

B. O. MULLIGAN *

BECAUSE of the continued mild, wet weather throughout the early winter months—the only frosts recorded at the Arboretum were on November 3, December 13 and December 23 (all 32° F.), while the rainfall in November was 7.10 inches (normal 4.55 inches) and in December 4.38 inches (normal for Seattle 5.33 inches)—an unusual number of plants were in flower at Christmas time, 1953.

Of those which are normally autumnal in their season and were still producing flowers perhaps the South African *Leonotis Leonurus* outside the office door, facing south, was most remarkable for its bright orange whorls, especially since it began blooming in November.

Around the corner on the west side *Hypericum* "Rowallane Hybrid," 5 or 6 feet tall, still held a few of its lovely golden saucers, while the curious, spiny Argentine shrub, *Colletia armata*, had been flowering a few yards away ever since September. A young specimen of the strawberry tree, *Arbutus Unedo*, close to the clubhouse, and the faithful Laurustinus, *Viburnum Tinus*, were likewise noticeable in the same area.

In the Winter Garden, where we expect to

see flowers at this time, were several varieties of *Camellia Sasanqua*—white, pink, and red in color—the golden-yellow Chinese witch hazel, *Hamamelis mollis*, with *Erica darleyensis* in front of it, and along the path towards Woodland Garden a bright patch of the heather, *Erica carnea* "King George," and more surprisingly, the tall white Portuguese *Erica lusitanica*, normally later in its appearance. *Viburnum fragrans* had of course been most evident to the nose as well as the eyes for some time. In the same area the green Corsican Hellebore, and a species of *Bergenia* (K. W. 18890) collected in Manipur by Kingdon-Ward in 1949, with prominent heads of white, Saxifrage-like flowers, were flowering almost side by side. On Azalea Way the winter cherry, *Prunus subhirtella* var. *autumnalis*, was as lovely as it has ever been, but our earliest rhododendron, the deciduous *R. mucronulatum*, although showing bloom since early November, was sparser than usual.

Along the Upper Road by Rhododendron Glen that very precocious Manzanita from the hills behind Oakland, California—*Arctostaphylos Andersonii* var. *pallida*—repeated its production of charming little clusters of pink bells, first shown a year ago, while in the camellia collection nearby the double white *nobilissima* again proved to be by far the earliest form of *C. japonica*.

This makes a total of fifteen distinct shrubs and one tree, of which approximately two-thirds can be grown in the Seattle area without any particular trouble or difficulty, provided that ordinary care is given to the selection and preparation of the site according to the individual needs of the plants concerned. An investment in a proportion of them will bring welcome and increasing dividends at or before Christmas in many seasons, depending upon the humors of the weather.

A Peek Into Pandora's Jewel Box—1954

(Continued from Page 8)

satiny texture and creamy stamens and petaloids. It has an instant appeal.

New camellias, their number is legion. Many fine old varieties will never be superseded but there is definite improvement in many and there are those which are still in the unnamed state, to be released later, which have even more promise.

It is a fascinating, endless chain, this "new" in camellias.

ARBORETUM NOTEBOOK

This department is published for correspondence and pertinent comments by experienced growers on interesting plants and their culture. We solicit your questions but space limitation necessitates the publishing of only such answers as we deem of general interest.

GARDEN HINTS . . .

MARCH

Spring is more than a date on the calendar but it is amazing how the first signs of spring seem to watch the calendar. The first pussy-willows and the first *Narcissus minimus* may vary only a few days through the years and whatever the weather.

Chemicals have decidedly invaded the garden until one wonders if we have a garden to spray or a garden for growing flowers. The gardener should select only those chemicals that have proven themselves for several seasons.

Often the overgrown, scraggly rhododendrons need severe pruning to keep them beautiful. It should be kept in mind, however, that one season's blooms are lost when cutting back. Some branches may be pruned this year and some next year, extending the pruning so there will be a few branches blooming while the bush is forming new buds.

Pinch out ("thumb and finger prune") the end buds of shoots that are growing too tall. This will encourage new shoots to make the plant or shrub more compact.

Evergreen shrubs may be planted while weather is showery.

A most graceful and seldom seen annual is *Omphalodes linifolia*. It grows from 12 to 18 inches high and is covered with branching spikes of lovely, forget-me-not-like white flowers rising from gray-blue, glaucous foliage. The blossoms are valuable for cutting. Once established it seeds itself charmingly. It withstands weather without support.

APRIL

Many gardeners are beginning to appreciate the value of geraniums for color in the planting scheme. The new colors are more beautiful each year. They bloom all summer, increasing the number of flower stalks as the season progresses. In California they are often planted among the rhododendrons, continuing

the same colors and forms of bloom.

Now gladioli may be planted and also all the tender summer flowering bulbs.

Snapdragons, especially, should have the end bud pinched back to make bushy plants and more blooms.

Repair bare patches in the lawn now and fill in hollows that may have been left by moles.

Dr. Westcott says "black spot" on rose leaves may be sprayed with "Fermate," a du Pont trade name for "Ferbam." She says "summer spores are formed by acervuli (a special fruiting body similar to mildew) which break through the cuticle and are splashed by rain to nearby leaves. Infection takes place in any period when the leaves are continuously wet for six hours."

MAY

When moving the scented geraniums from the window garden, try planting them in the rose beds. The combined fragrance is pleasing.

All bulbs receive sustenance and energy for next year from the leaves produced this year. When the leaves are cut away the bulb shrivels and dies. If the leaves, as they gradually become yellow, detract from the beauty of the garden they may be carefully pegged down with wires under surrounding foliage.

London Pride (*Saxifraga umbrosa*) is a modest beauty which should be given a spot in every garden. It does its best in part shade. There is a most interesting account of the use of this common name in "Gardening Illustrated," February, 1954, pp. 38-39, by Prof. E. F. Warburg of Oxford.

The lilac species generally bloom late in the lilac season, lengthening the period of bloom. Their appeal is significant. The shrub is more open and the blooms are more subtle and exquisite than the hybrid kinds. *Syringa Sweginzowii* has fragrant, pinkish-mauve flowers blooming profusely, literally covering the bushes.

Hydrangeas coming into flower may have small doses of fertilizer. Tuberous begonias may be planted in the garden now.

PRUNE IN MARCH

Caryopteris—cut hard back previous summer's shoots

Erica (Heath) — fall-flowering — remove dead flowers and trim

Hydrangea paniculata—thin out and cut back new growths to two buds

Symphoricarpos (snow-berry) — cut out dead and weak shoots

Roses

PRUNE IN APRIL

Arbutus Unedo—cut back straggly shoots

Arundinaria (Bamboo) — cut out dead and crooked canes

Buxus (Box)—prune hard if necessary

Calluna (Ling)—trim off dead flowers and cut back long shoots

Choisya ternata—cut back long shoots and dead wood

Erica (Heath)—winter-flowering—cut off dead flower heads

Hamamelis—thin out crowded branches

Ilex (Holly)—prune with secateurs

Mahonia—cut out old woody stems and shorten the rest

Pernettya—cut back long stems

Photinia—thin out and trim to shape

Pyracantha—shape by cutting back long shoots

Romneya—cut out dead wood and weak growth

Skimmia—thin out and shape bushes

Veronica—cut back two-thirds

PRUNE IN MAY

Aucuba—if needed, cut back hard

Garrya elliptica—cut back long stems

Osmanthus—thin out and cut back straggly shoots

Wistaria—cut back laterals often to induce more flowers

BRYAN TAYLOR

The earliest bloom in our woodland garden, this year, was the little *Scoliopus Bigelovii*, a native of northern California. Its pale green petals, striped with dark reddish brown, appeared during the first week of January, with no sign of the two broad green leaves which will come long before its last blossom.

This Foetid Adder's-tongue which is a member of the *Liliaceae* may not be beautiful but it is intriguing. Its curious flower opened even before the Hepaticas or Trailing Arbutus and is a very welcome sign that spring is just beyond any intervening snow and frost.

Epigaea repens, the American Trailing Arbutus, has a reputation for being uncooperative. It is not one of the older residents in our garden but it seems to be one of the more

contented. A cavity in a very old Douglas Fir log was filled with a combination of garden loam, sand, peat and forest duff and the little easterner is not only stretching in all directions but every branch is tipped with buds.

Many of our native shrubs and ground-covers seem to resent being moved to a lower altitude and to different climatic conditions. Instead of uprooting mature plants try growing them from cuttings. Put your cuttings in a tightly covered container with a bit of damp peat moss. *Pachystima myrsinites*, *Cassiope Mertensiana*, *Phyllodoce empetriformis*, *Arc-tostaphylos nevadensis*, *Ledum groenlandicum*, and *Kalmia polifolia* are some of the wild shrubs which can be propagated in this way. Ways of propagating these and other mountain and woodland plants are given in Mr. L. D. Hills' helpful book, "*The Propagation of Alpines*."

This is an excellent means of bringing the wilderness plant material into your garden and leaving the mature plants where they will have a chance of living to a ripe old age for you and others to enjoy another year. Remember that the same conservation laws hold true for cutting plant material as for digging it.

PAT BALLARD

FOR FRAGRANCE

Do you know the sweetness of the *Paulownia* tree when it is in bloom?

Plant a dozen tuberose bulbs, six in a place, against the deep green of some small-leaved foliage plant. They bloom in summer and are distinctive, beautiful and fragrant.

The fragrance of the leaves of the Sweet Briar rose lasts all summer. Plant near a path where its leaves can be easily reached and crushed in the hand.

Lemon Verbena (*Lippia citriodora*, syn. *Aloysia citriodora*) grows nicely in a protected situation in our climate. Its sweet smell is a remembrancer.

Theophrastus, a pupil of Aristotle, 370-286 B. C., was the first to attempt to name plants on a scientific basis. The Romans generally considered the trees to be feminine and we

have followed that custom. The ending of all Latin feminine names is *-a*, so the Copper Beech *Fagus* has its descriptive name, *purpurea* ending in *-a*. However, the Greeks believed shrubs should be either neuter or masculine, so when a plant such as rhododendron was named by the Greeks it has the neuter *-um* ending to its specific name, such as *lapponicum* or *didymum*, agreeing with the noun.

The yearly awards of merit given by the Royal Horticultural Society of England are always especially interesting because each winner has been subject to a grilling test. This year's awards include two shrubs or small trees: *Arbutus hybrida*, a natural cross between *A. Andrachne* and *A. Unedo*, and *Camellia Sasanqua oleifera*. Some of the Chrysanthemums winning awards were: "Holiday," terra cotta; "Paramount," white pompon, and "Royal Crimson," pompon. These three are cutting varieties. "Fred Shoemith," white, eight inches across; "Canary," yellow, reflexed; "Golden Guinea," yellow, "high quality bloom."

The above list was taken from "Gardening Illustrated," February, 1954.

Fuchsias for All

(Continued from Page 27)

the moisture better than a basket. If using a clay container give it two thick coats of paint inside before planting the fuchsia. Wood is best. They can be hung from the branches of the shade trees, in window boxes, on high shady walls or rock embankments, or as specimen baskets in lath houses. To mention a few trailers: "Cascade," "Muriel," "Marinka," "Galli Curci," "Amelia Aubin," "Cavalier" and "Bloomer Girl" are among the standard favorites. Most of the big reds and purples will take more training to trail, but of course when you do get one you really have something outstanding. Pick your fuchsias carefully as early in the year as possible and start fertilizing and pinching. Form a good bushy top before letting the branches start to trail over the edge of the container. Use a fertilizer high in nitrogen until the last of June to force the leafy growth and start the long streamers. Then start feeding with a fertilizer high in phosphates to bring on the blooms. You will be amply paid for your pains.

There are many other possibilities for the use of fuchsias around a home, but the few listed will serve to make a fuchsia fan of you and guide the amateur in starting his fuchsia planting to get the best results. When the few simple rules of watering and fertilizing are followed there is no flower that will give the owner more pleasure or blooms for a long period of time.

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Book Reviews

Preliminary Holly Check List: Bulletin No. 6, Holly Society of America, Nov., 1953. Price \$1.00, in paper covers.*

THIS is the first attempt to draw up a complete alphabetical list of the names of all hollies now in cultivation in this country, whether species, varieties, hybrids or horticultural clones.

Apart from the mere names in Section II there is included a great deal more information about each entry in the list: the author of the name, raiser and/or introducer, date if known, country or state of origin, in what public collection it can be seen, what nurserymen list it, synonyms, and to what group it belongs (i.e., *Aquifolium*, *opaca*, *crenata*, etc.). The last category is indicated by letter symbols in the left margin; likewise for the data concerning public collections, but for nurseries key numbers are used.

Species are indicated by bold-face type, accepted clonal names by capitals, synonyms and doubtful names by italics.

This list covers twenty-two pages and must total approximately 650 names. Following it, in Section III, are alphabetical lists of names of all American hollies (*Ilex opaca*), English hollies (*I. Aquifolium*), Chinese (*I. cornuta*), Japanese (*I. crenata*), other evergreen, and finally deciduous hollies. Consequently, it is easy to locate any of the now numerous horticultural forms in any of the major groups.

Section I of the booklet comprises four other lists of differing importance: (1) of botanical authors concerned with hollies from the 18th century to the present day; (2) of discoverers, originators and introducers of hollies, chiefly of recent date and in the United States; (3) of nurseries specializing in or offering hollies, and (4) of twenty-one arboreta, botanical and other public or private gardens where collections of hollies are grown, including the University of Washington Arboretum, Seattle. On page 5, following a Statement of Purpose, there is a bibliography of fourteen titles, from J. C. Loudon in 1838 to H. H. Hume's latest work on the genus, published 1953. Finally on pp. 51-56, lists of unrecognized or doubtful names, and of species and varieties apparently not cultivated here.

This most useful list is the work of a committee of three—Dr. C. H. Connors of the Agricultural Experiment Station, New Brunswick, N. J.; Professor R. B. Clark of Rutgers University, and Mr. John C. Wister, Director of the Arthur H. Scott Horticultural Foundation at Swarthmore College, Pennsylvania. They recognize that this is only an initial effort to bring some order into the much-increased and still-growing number of names applied to hollies, for the benefit of all growers and to prevent further duplication of names. "The main purpose of the editor has been to show what information is available now in order that others may correct its mistakes, fill in its omissions, and publish more useful lists in the future."

*Obtainable from Mr. C. A. Young, Jr., Bergner Mansion, Gwynn Falls Park, Baltimore 16, Maryland.

A great deal of hard work, research and inquiry has obviously gone into its preparation, and the Holly Society's officers as well as the committee are certainly to be congratulated on its production. It is much to be hoped that nurserymen in particular will make full use of its authoritative data wherever hollies form part of their stocks, while those who are seeking particular varieties will now be able to locate them.

B. O. MULLIGAN

Lilacs for America, fifty pages in attractive format, has just been issued by the American Association of Botanical Gardens and Arboreta. This revision of a pamphlet-printed report of 1942 of the same title is the work of a special committee of the Association under the most able and authoritative chairmanship of John C. Wister, Director, the Arthur Hoyt Scott Horticultural Foundation, Swarthmore, Pa.

THE book is in three main sections and a supplement. Also a preface by Mr. Wister in which in his lucid style he explains the need for this survey. It is replete with information and suggestions and is an enjoyable essay in itself.

Section I is taken up with the "Recommended List of One Hundred" compiled from the rating votes of ninety-one lilac growers resident in twenty-eight of our states and including three from Canada. Many hundreds of varieties were considered. The "100 List," which first appeared in the '42 report, is here divided into singles and doubles in the seven color groups, and shows voter preference for each variety. The 1953 list has 13 per cent revision, replacements being largely from introductions in the last fourteen years. It is certain to be outstandingly helpful to amateur gardeners and to public and semi-public gardens it is invaluable.

Sections II and III alphabetically list about eight hundred varieties with color, rating, origin, and nurseries where offered. Here in twenty-one pages is a vast field of lilac facts brought into quick availability for the reader by purposeful use of type size and boldness of face and the use of symbols and abbreviations. The five-page supplement presents well-organized information illustrating the relationships of wild species and the parentage of hybrid races. The book is a fine contribution to garden literature and is priced very low (\$1.00) to stimulate as wide and as immediate use as possible. It is distributed by the Arthur Hoyt Scott Foundation mentioned above. Whether a gardener is to plant one; ten or a hundred lilacs this report is a must for him. It is truly a source book on lilacs.

And now before closing, permit me one more word about the "100": What an amazing list it is! The concentrate of samples of the very best from all America's gardens. What gorgeous aristocrats, and what floral richness any and all of them provide wherever planted.

The Association is to be highly commended for published reports such as "Lilacs for America."

F. G. KENNEDY
S. 1718 Southeast Blvd.
Spokane, Washington

"The Rhododendron and Camellia Year Book, 1954." Published by the Royal Horticultural Society, London, Nov., 1953. Price \$1.65, including postage.

THE R. H. S. Rhododendron and Camellia Year Book for 1954 has been distributed to members of the Rhododendron Group, and is a most interesting volume.

The combining of information on camellias with that on rhododendrons should cause it to appeal to a larger number of people in this country.

The leading article, a memorial to the late Lord Aberconway and his beautiful estate of Bodnant, is by Patrick M. Syngé, and describes many of the outstanding Bodnant hybrids, as well as many other plants. It has as an illustration the beautiful color frontispiece of Lord Aberconway with R. "Elizabeth" and R. "Cowslip."

Following this is an article on rhododendrons at Mt. Stewart, Northern Ireland, and the description of its subtropical climate is a cause for envy at this date (January 25), when snow lies in western Washington.

An article on some of the species plantings at Windsor Great Park, by E. H. Savill, is followed by two accounts of camellias, one on a search for Fortune's Yellow, by Ralph Peer, and a very interesting account of *Camellia Sasanqua* in the Lower South, by K. Sawada.

Next is a review of some rhododendron species by the late Lionel de Rothschild, followed by several more articles of general interest on rhododendrons and camellias, too numerous to list.

There are good descriptions of the Seattle Rhododendron Show, by B. O. Mulligan, and of the Tacoma Rhododendron Show, by Fred G. Robbins.

There are several other articles by American writers, a list of new hybrids, and a good account of the English show in London, which sums up one of the most interesting year books that has been published.

LESTER E. BRANDT

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Pruning Ornamental Shrubs

(Continued from Page 22)

wood and thinning out any crowded older shoots in the center. Examples: *Jasminum nudiflorum*, *Prunus triloba*.

B. *Deciduous shrubs flowering late May and June on last year's growth:*

Pruned as soon as the flowers fade by cutting back the flowering stems to strong new shoots on the main branches and cutting out at ground level any worn-out older shoots. Examples: *Philadelphus*, *Dier villas* (Weigelas), Lilacs.

C. *Deciduous shrubs flowering from mid-June onwards on the new growth of the current season:*

They must be pruned in March by cutting back last year's growth to within a few inches of the older wood. Note that they are *not* pruned after flowering since this would encourage new growth in the late fall, which would be killed by the first winter frosts. Examples: *Ceanothus* "Gloire de Versailles," *Clematis Jackmanii*, *Spiraea* "Anthony Waterer," and *Buddleia Davidi* (*variabilis*).

Broadleaved evergreen shrubs can be classified in the same manner as shown above. For example, rhododendrons flower on last season's growth from late winter to June, depending on variety, and therefore are pruned at flowering time when necessary—and that means only when they are growing leggy and shapeless. The important part of pruning rhododendrons and azaleas is the removal of the flowerheads as soon as they fade; this helps the shrub to branch out and increases the amount of flowering wood for the next season.

Coniferous evergreen shrubs should be pruned in late March or early April when the new growth is starting. Prune only to maintain shape and to prevent overcrowding. Always cut to a side branch that will hang over the cut portion; nothing looks worse than a badly pruned conifer. Incidentally, an effort should be made to hide the cuts on all evergreens; this can be done by sloping all cuts away from the main viewpoint.

Winter, spring and early summer flowering

heathers should have a "crew haircut" immediately after flowering. Midsummer and fall flowering heathers should have the same treatment in March.

Hedges present a slightly more awkward problem. It is important to form a close, dense bottom while the hedge is still young and this is best achieved by pruning three or four times a season. Shape the hedge so that the bottom is wide and the top narrow. The sloping sides let the sun strike the lowest branches and help to keep them thick and dense. Old evergreen hedges are best pruned in April and August. Ivy on banks should be pruned hard back in early April to make a dense mat. The growth will very quickly cover the bare stems.

Before you start pruning take a look at your tools. You need a small and a large pair of pruners—the small for light wood, a good sharp pruning knife, and a "keyhole" saw, tapering to a thin end so that it can get right into a crowded shrub. All cuts over half an inch should be sealed with an asphalt emulsion paint.

Don't prune in freezing temperatures—*don't* prune unless you have a reason—go back and read again the three basic reasons for pruning at the beginning of this article and then—

Go ahead, Expert, do it all yourself!

The University Botanic Garden, Cambridge

(Continued from Page 3)

entrance will open onto a vista, outlined with groups of trees, running right across the new and old sections of the Garden. An avenue

over 300 yards long, consisting mainly of trees that grew in Europe before the Ice Age, will lead to a second new entrance, and other features will include demonstration beds for teaching Experimental Taxonomy, a garden for medicinal plants designed on an Elizabethan model, a section for native plants growing, as far as possible, in their natural surroundings, and possibly a series of "historical gardens" ranging from Roman times through the centuries to the Victorian era. The clearing of the allotments for the new Garden area, including 4½ miles of hedges, is quite a formidable task. It is being carried out largely by the student gardeners who are thus gaining valuable experience in garden layout and design.

In the old area improvements will also be made, and the first section of a new rock garden around the edge of the lake, using ultimately 500 tons of rock, has already been built. The heating system for the glasshouses has been entirely reconstructed, with automatic stoking and motorized valves in each house, and new offices, library and meeting room are being made available. Last, but not least, it has been possible to take on additional scientific staff whose main task is to check the naming, and make a card-index, of all the plants in the Garden.

It must be a rare occurrence for a Botanic Garden to be given such a chance for development as we now have, thanks to the Cory bequest, and we are endeavoring to create a Garden that will be worthy of Mr. Cory's generosity, and of the great tradition of botanical research and teaching at Cambridge.

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Tree Peonies

(Continued from Page 6)

Not daunted by the almost insignificant flowers and the lack of enthusiasm with which the new introductions had been greeted, two plant breeders set out to cross them with the Moutan Peony. The first breeder, Professor Louis Henry of the Paris Museum of Natural History, produced the heavy double variety, 'Souvenir de Maxime Cornu', yellow suffused with rose. The other breeder, the famous Victor Lemoine of lilac fame, produced the variety 'L'Esperance', a well-shaped yellow single.

These two varieties showed the possibility of such hybrids and the Lemoine firm introduced between 1915 and 1930 such varieties as 'Alice Harding', 'Aurore', 'Chromatella', 'Flambeau' and 'Surprise'. Then Professor A. P. Saunders of Hamilton College began his work and introduced the variety 'Argosy', which is now available in several nurseries, and between 1935 and the time of his death in 1953 he had raised, selected and named over fifty magnificent new varieties, with many blends of yellow and rose, a few plants of which are gradually being distributed. These are giving us a totally new concept of the possibilities of these hybrids as fine new garden plants.

In the meantime, until enough of these have been propagated to make possible wider distribution, gardeners may well plant some of the magnificent varieties of the Moutan Peony of which the following are merely some indication of the wide color range and not necessarily the most recommended or most available in each color:

White	Fuji-oe-ryo
	Renkaku
	Yaso-okina
	Ima-chowkow
	Kogane-zomo
Light Pink	Shuchiuka
	Dohushin-den
	Shishinden
Rose Pink	Iro-no-seki
	Doun
	Terute-nishiki
Rose Red to Vermilion	Mikasa-yama
	Ukare-gishi

Scarlet	Hatsu-hinode
	Nishiki-no-shitone
Crimson	Koi-kagura
	Sumi-no-ichi
Purple	Rimpo
	Ruriban
Magenta	Eclaireur
	Shikoden
Lilac Pink	Hano-no-mikado
	Jitsu-getsu-ko

These varieties, or varieties close to them in color and in quality, are now available from three or four peony specialists whose names can be secured from the editor of this BULLETIN. I urge the gardeners of the Puget Sound area to try them. , , ,

Evergreen Ground Covers

(Continued from Page 25)

flowers July-September, the blooms are pink and sometimes white. *C. cilicium* and *C. Atkinsii* bloom in July and August and their pale rose or white flowers are usually lined or spotted with red.

Hepatica triloba grows about 6 inches high, the three-lobed leaves lasting over the winter; the flowers of white, blue or pink appear in April, followed by the new leaves.

If you are seeking added color for a deeply shaded part of the garden, *Erythronium*—dog-tooth violets, *Sanguinaria*—blood root, *Dicentra cucullaria*—Dutchman's breeches, and *Trillium* can be planted beneath the ground cover. The first three have foliage that disappears almost immediately after flowering. Once planted they require no further care and in early spring add a charming and unusual note to what might otherwise be a dark corner of the garden.

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cassinoides, dentatum, dilatatum, fragrans,
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